

Integrated Financial Management Information System Next Gen



REQUEST FOR PROPOSAL
Selection of System Integrator (SI)
to
Design, Develop, Implement, Operate and Maintain
Integrated Financial Management Information
System Next Gen



Volume I: Scope of Work, Functional, Technical and Operational Requirements

Commissioner, Treasuries & Accounts, Department of Finance, Government of Madhya Pradesh
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This RFP includes certain statements, estimates, projections, targets and forecasts with respect to project IFMIS Next Gen. Such statements estimates, projections, targets and forecasts reflect various assumptions made by the management, officers, consultants and employees of CTA which assumptions (and the base information on which they are made) may or may not prove to be correct. No representation or warranty is given as to the reasonableness of forecasts or the assumptions on which they may be based and nothing in this RFP is, or should be relied on as, a promise, representation or warranty.

About the RFP

This RFP is meant to invite proposals from interested organizations capable of delivering the services to Commissioner, Treasuries and Accounts, Finance Department, Madhya Pradesh for the project Integrated Financial Information Management System (IFMIS) Next Gen, described herein. The content of this RFP has been documented as a set of three volumes explained below.

RFP Volume I – Functional, Technical, Operational Requirements and Scope of Work

Volume I of this RFP intends to bring out all the details with respect to solution and other requirements that the department deems necessary to share with the potential bidders. The requirements and scope of work set out in this volume has been broadly categorised as scope of work, functional, technical, and operational covering multiple aspects of the project requirements. It also includes service level metrics to be maintained for reasonable quality of service to users of the system.

RFP Volume II – Bidding Process and Formats

Volume II of this RFP intends to detail out all that may be needed by the potential bidders to understand the bidding process details and formats for preparing the bids.

RFP Volume III – Contractual and Legal Specifications

Volume III of RFP intends to provide the contractual terms and Master Service Agreement (MSA) that the department wishes to specify at this stage.

This document is Volume I of the RFP

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Abbreviations

#	Abbreviation	Description
1.	ATO	Assistant Treasury Officer
2.	BCO	Budget Controlling Officer
3.	BE	Budget Estimates
4.	CAAA	Controller, Aid, Accounts and Audit Division
5.	CAG	Comptroller and Auditor General
6.	CAGR	Compounded Annual Growth Rate
7.	CAS	Central Accounts Section
8.	CB	Cheque Book
9.	CCD	Civil Court Deposit
10.	CERT-IN	Computer Emergency Response Team – India
11.	CIN	Challan Identification Number
12.	CINB	Corporate Internet Banking
13.	CM	Clearance Memo
14.	CnF	Contingency Fund
15.	COA	Chart of Accounts
16.	CPF	Contributory Provident Fund
17.	CPM	Critical Path Method
18.	CSC	Citizen Service Centers
19.	CSS	Centrally Sponsored Scheme
20.	CSV	Comma Separated Values
21.	CTA	Commissioner, Treasuries and Accounts
22.	CVP	Commutted Value of Pension
23.	DBA	Database Administrator
24.	DCP	Decentralized Planning
25.	DD	Deputy Director
26.	DDO	Drawing and Disbursement Officer
27.	DE	Departmental Enquiry
28.	Dept.	Department
29.	DFD	Data Flow Diagram
30.	DIF	Directorate of Institutional Finance
31.	DLFA	Director Local Fund Audit
32.	DMO	Debt and Investment Management Office
33.	DOB	Date of Birth
34.	DoF	Department of Finance
35.	DOJ	Date of Joining
36.	DOR	Date of Retirement
37.	DPC	District Planning Committee
38.	DPF	Departmental Provident Fund
39.	DPO	District Pension Office
40.	DPPFI	Directorate of Pension, Provident Fund and Insurance

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#	Abbreviation	Description
41.	DPR	Detailed Project Report
42.	DR	Disaster Recovery
43.	EAP	External Aided Project
44.	e-HRMIS	E-Human Resource Management Information System
45.	FAQ	Frequently Asked Questions
46.	FRBM	Fiscal Responsibility & Budget Management
47.	FRS	Functional Requirement Specifications
48.	GAD	General Administration Department
49.	GIGW	Guideline For Indian Government Websites and Apps
50.	GPF	General Provident Fund
51.	GRF	Guarantee Redemption Fund
52.	HoA	Head of Account
53.	HoAD	Head of Administrative Department
54.	HoD	Head of Department
55.	HoO	Head of Office
56.	HR	Human Resource
57.	HRMIS	Human Resource Management Information System
58.	HRMS	Human Resource Management System
59.	IAR	Information Asset Register
60.	IFMIS	Integrated Financial Management Information System
61.	IFSC	Indian Financial System Code
62.	IGA	Inter Government Adjustments
63.	IGRS	Inspector General of Registration and Superintendent of Stamps
64.	INR	Indian Rupees
65.	INV	Inventory
66.	JD	Joint Director
67.	JE	Journal Entry
68.	JV	Journal voucher
69.	KD	K – Deposit
70.	KPA	Key Performance Area
71.	LFA	Local Fund Audit
72.	LFD	Local Fund Deposit
73.	LLD	Low Level Design
74.	LMS	Learning Management System
75.	LoV	List of Value
76.	LTC	Leave Travel Concession
77.	MCR	Miscellaneous Capital Receipts
78.	MICR	Magnetic Ink Character Recognition
79.	MIS	Management Information System
80.	MLA	Member Of Legislative Assembly
81.	MPEB	Madhya Pradesh Electricity Board
82.	SI	System Integrator

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#	Abbreviation	Description
83.	MTEF	Medium Term Expenditure Framework
84.	NABARD	National Bank of Agriculture and Rural Development
85.	NEFT	National Electronic Fund Transfer
86.	NPS	New Pension Scheme
87.	NSDL	National Securities Depository Limited
88.	NSSF	National Small Savings Fund
89.	NVDA	Narmada Valley Development Authority
90.	NWMA	Normal Ways and Means Advance
91.	OD	Overdraft
92.	OMB	Open Market Borrowings
93.	OTT	Out of Treasury Transactions
94.	PAD	Public Accounts Division
95.	PAN	Permanent Account Number
96.	PAO	Pay and Account Officers
97.	PC	Planning Commission
98.	PD	Personal Deposit
99.	PEM	Public Expenditure Management
100.	PERT	Program Evaluation and Review Technique
101.	SI	System Integrator
102.	SLA	Service Level Agreement
103.	SLM	Service Level Metrics
104.	SoD	Segregation of Duties
105.	SNA	Single Nodal Agency/Single Nodal Account
106.	SPARSH	Samyochnit Pranaali Akikrit Shighra Hastantaran
107.	UAT	User Acceptance Testing
108.	VRS	Voluntary Retirement Scheme
109.	VT	Voted
110.	WBS	Work Breakdown Structure
111.	WDDF	Works Department Drawl Facility
112.	WMA	Ways and Means Advances
113.	XML	Extensible Markup Language

1 Project Background

1.1 Background

Finance Department (FD) of Government of Madhya Pradesh (GoMP) has embarked on a journey to conceptualize the Integrated Financial Management Information System (IFMIS) Next Gen for managing all core Financial Management, Human Resource Management (Finance functions only) and Pension Management activities for the State. The state is already using IFMIS 1.0, which was conceptualized in year 2009-10 and went live in September 2015. However, with the advent of new technologies and constantly evolving stakeholder needs, the system requires functional and technology modernization. Moreover, these systems were developed using the technology platforms pertinent to that period. Hence, a significant modernization program has been initiated to conceptualize and operationalize IFMIS Next Gen.

FD has been internalizing IT initiatives since late 1990s. The treasuries were using TRACIS software, developed by NIC which was later replaced by the State Financial Management System (SFMS) in 2003 with an objective to computerize treasury operations of the state. The system was implemented on a decentralized architecture i.e., every treasury had its own application and database server. Thereafter, the same project was transformed subsequently in Centralized State Financial Management System (C-SFMS) which got partially discontinued in a couple of months for majority of the modules. As C-SFMS did not fulfil the newer requirements of the much needed Financial Management of the State, in 2015, FD planned to introduce IFMIS not only to address the technology obsolescence but also to enable new functional requirements of the system. The GoMP IFMIS 1.0 application is primarily based on JAVA and Oracle technologies. The application is hosted on an on-premises Data Centre (DC) at Paryawas Bhawan in Bhopal with a Disaster Recovery (DR) site in Gwalior and Near DR (NDR) site at the State Data Center in Bhopal.

The key objective of the IFMIS Next Gen project is to drive a technology led transformation of the public financial management ecosystem in Madhya Pradesh. This will encompass development of a new application and redesigning of processes to strengthen operations and facilitate better monitoring of state finances. The key parameters and strategy for transformation are highlighted below –

Parameters	Requirements	Strategies
Financial Management Ecosystem	<ul style="list-style-type: none">• Improved Financial System• Integrated service delivery• Institutional & Individual Capacities• Sustainability in the long run	<ul style="list-style-type: none">• One Stop IFMIS Next Gen e-Gov solution on latest technology platform with scalability• End to end e-Payments, e-Audits, e-Receipts, e- Accounts, e-Pension, etc.

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Parameters	Requirements	Strategies
	<ul style="list-style-type: none"> • Create a Secure, Efficient and Transparent system for Financial Management 	<ul style="list-style-type: none"> • Decision Support System through Dashboards at each level of the stakeholders • Capacity Building & Change Management • Modular and Future Ready • Connected and Interoperable
	<ul style="list-style-type: none"> • Government Process Re-engineering & Departmental deliberations 	<ul style="list-style-type: none"> • Timely MIS availability to all the stakeholders • Online reconciliations • Use of Emerging Technologies (AI, ML etc) • Adoption of International Standards (ISO 9001:2015, ISO 27001:2013, etc.)
	<ul style="list-style-type: none"> • Accountability, Effectiveness & Control 	<ul style="list-style-type: none"> • Changes in Codes, Acts, Rules, etc. as per the envisaged IFMIS Next Gen • Real time information • Single source of Truth • Audit logs & Audit trails • AEPS, E-Signatures, etc.
Ease of Use	<ul style="list-style-type: none"> • Involvement of stakeholders during conceptualization • Pain areas & Challenges • Convenience to the stakeholders 	<ul style="list-style-type: none"> • Development of User-friendly system based on user experience (UX) • Faceless, Paperless & Contact less • Intuitive and Adaptive • Grievance Redressal Mechanism • Digi lockers, e-wallets, etc.

Table 1: Strategy for IFMIS Next Gen

The key objectives envisaged to be achieved through the implementation of IFMIS Next-Gen are –

- Implementation of robust financial management in the state through a modern platform-based e-governance solution with an omni-channel - web & mobile based service delivery.
- Incorporate leading practices and suggestions through an exhaustive study of other similar systems to build a futuristic system and plan for the next 10 years
- Explore the use of emerging technological capabilities to enhance user experience, reduce manual effort and improve accuracy

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- Seamless integration with other systems to exchange data and improve data quality
- Differentiated and integrated service delivery for BCOs, DDOs, Employees, Pensioners, citizens, vendors and other stakeholders
- Promote a faceless, contactless and paperless governance by automating key processes and reducing redundancies
- Ensure maintenance of single source of truth for financial data of the state
- Facilitate ease of use by all the stakeholders of the system
- Strengthen change management and capacity building strategies by working closely with end users.

1.2 The Organisation

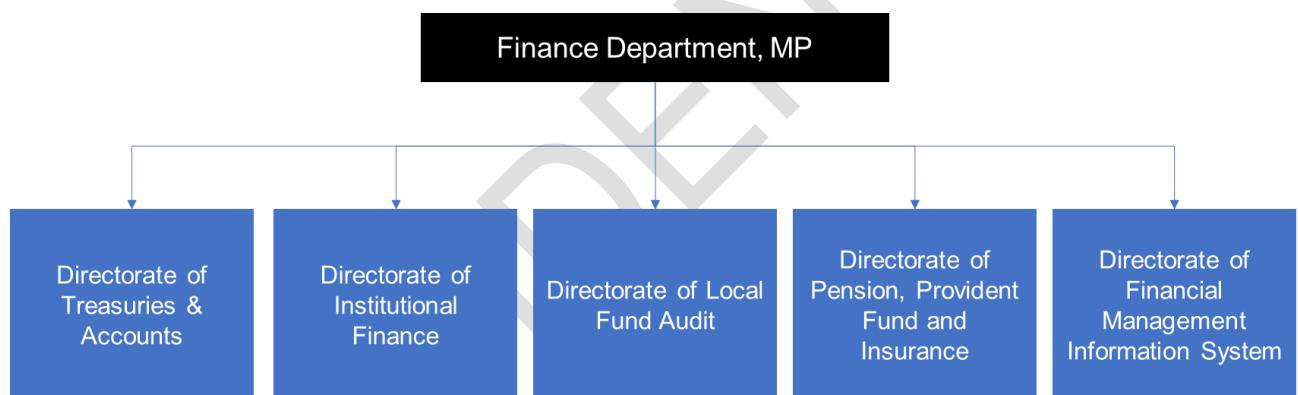


Figure 1: Organization Structure of FD

1.3 Stakeholders

S.No	Stakeholders
1.	Finance Department of Government of Madhya Pradesh, India
2.	Directorate of Treasuries and Accounts is the Head of the Department
3.	Other Directorates under FD (DLFA, DFMIS, DoPPFI, DIF)
4.	Office of Divisional Joint Directors (7)

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S.No	Stakeholders
5.	Treasuries of District Level (54)
6.	Accountant General of Madhya Pradesh, Gwalior
7.	Reserve Bank of India, Gol
8.	Administrative Departments in the State of M.P.
9.	Public Sector Undertaking and Local Bodies of GoMP
10.	Agency Banks
11.	Drawing and Disbursing Officers
12.	Works and Forest Divisions
13.	Pensioners
14.	Employees
15.	National Payments Corporation of India
16.	Central Record Keeping Agency - National Security and Depository Limited
17.	MPSeDC
18.	Ministry of Finance, Government of India
19.	General Administration Department (GAD)
20.	Controller General of Accounts, Public Financial Management System (PFMS)
21.	UIDAI
22.	NIC
23.	GSTN

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S.No	Stakeholders
24.	GeM
25.	NABARD
26.	Service Providers like BSNL, MPEB
27.	Beneficiaries

2 Scope of Work

The scope of work for the IFMIS Next Gen includes solution design, development and implementation, followed by operations and maintenance of IFMIS Next Gen. The period is envisaged to be 24 months from the date of Signing of Contract. However, the development of modules under each iteration should be carried out as per the plan provided in the subsequent section. The operations and maintenance phase for IFMIS Next Gen will be for a period of five (5) years after 'final go-live' of IFMIS Next Gen. Post completion of the five (5) year period of O&M, the contract can be extended on mutual agreement for a maximum of two (2) years or part thereof, on yearly basis.

The System Integrator (SI) needs to prepare the appropriate solution design and develop the system as per the scope of work and other terms and conditions of the RFP. In case SI has not considered any component/service which is necessary for the project requirement or is required to meet the intended performance and service levels as mentioned in this RFP, the same needs to be brought by the SI at no additional cost to CTA.

The scope of the work for the SI for envisaged IFMIS is broadly categorised under two tracks

- Track 1: Project Planning, Design, Development & Implementation of IFMIS Next Gen Project
- Track 2: Operation and Maintenance of IFMIS Next Gen Project

2.1 Project Activities

As already stated, the implementation phase for the project is for a total duration of twenty-four (24) months, followed by Operations and Maintenance (O&M) for 5 years (from date of go-live of IFMIS Next Gen). If required, the competent authority may extend the agreement for up to two (2) years or part thereof on mutually agreed terms and conditions. The table below outlines the key activities envisaged as part of the project.

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The table given below may not be exhaustive. SI is responsible to complete all those activities which are specified in this RFP but not listed here.

Stages of Project	Description of Activities
Track 1: Implementation of IFMIS Next-Gen	
Implementation Planning, Design and Setup Stage	<ul style="list-style-type: none"> • The SI shall submit and present a draft Project plan for Track I & II along with Kick off presentation and project road map. • Further, based on the feedback provided by CTA office, the SI shall revise and submit the detailed project plan for all iterations. • The SI is required to on-board all the Key Core and non Core Resources within the stipulated timelines • The SI shall also prepare the project design and implementation plan with timelines along with legacy system, migration plan from existing SI. • Study of the Finance Department, its functioning, rules, regulations, codes, Acts etc. • Study of existing IFMIS project in detail. • Meeting with all the stakeholders to confirm their requirements and integration requirements of the agencies (internal & external) • Design overall solution architecture & Prepare design document • Prepare security standards • Identify and design master tables with ER diagrams • Plan and design database setup and structure • Analyse module dependencies and sequencing • Finalize development cycles including number of iterations, timeline for each iteration, timeline for activities within each iteration, modules planned for roll out under each iteration, resource provisioning for each iteration, etc. • Coordination with SDC to plan development and deployment activities • Deploy necessary software in the non production environment provided by MPSeDC and get the environment ready for development and testing. • Sanity testing of the non production environments provided by MPSeDC

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Stages of Project	Description of Activities
	<ul style="list-style-type: none"> • Deployment of Project Management (PM) tool and configuration of project plan in the tool. • Deployment of Document Management System (DMS) tool for maintaining all the project documents, obtaining approvals, etc. • Submit and finalize transition Plan to demonstrate plan for substitution of modules from IFMIS 1.0 to IFMIS Next Gen for the decommissioning of IFMIS 1.0 and other legacy systems. • Preparation of migration plan for legacy data, and other requirements from incumbent SI. • Submission and finalization of first cut of user stories for all Modules to be developed. Please note that these user stories may undergo change as per Agile philosophy during the development phase of Wave I & II.
Development and Acceptance of modules	<p>Execution of planned iterations of modules. Activities within an iteration will include but not limited to -</p> <ol style="list-style-type: none"> i. Updation of User Stories based on the inputs given by CTA office ii. Design of wireframes iii. Data migration of all related data from existing IFMIS and other legacy systems (SFMS, CFMS & FMIS etc.) to IFMIS Next Gen database. iv. Development of modules v. Testing (Unit, Module, Integration, UAT, Load, Performance, data migration testing etc.) vi. Module acceptance by CTA office (including code review, unit testing, integration testing, data migration, UAT acceptance and as per the provisions given in section 9) vii. Training, handholding and change management <p>3rd party security testing and audit will be conducted at module acceptance & before Wave I, II go-live as defined in section 9 of Volume I of the RFP</p>
Pilot Run	<ol style="list-style-type: none"> i. The activity will commence after acceptance of module(s) for pilot. ii. Migration of residual data from existing IFMIS. iii. Pilot run of IFMIS Next Gen
IFMIS Next Gen Go-live	<ol style="list-style-type: none"> i. Successful Pilot testing of the related modules ii. Go Live means deploying the related modules of web & mobile and emerging technologies related use cases in Live environment for all the intended users. iii. Migration of residual data from existing IFMIS to IFMIS Next Gen database.

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Stages of Project	Description of Activities
	<ul style="list-style-type: none"> iv. Final testing and certification of IFMIS Next Gen encompassing all required modules by SI. v. 3rd party testing and certification, security audits and GIGW audit before go-live. vi. Final acceptance by CTA vii. Training, handholding and change management of all the deployed modules by SI viii. Go-live of modules in Wave I ix. Final Go-live of IFMIS Next Gen (all modules) for the entire state
Change Management	<p>This phase shall focus on seamless transition from IFMIS 1.0 to IFMIS Next Gen. This will include development and execution of communication strategy and campaigns for the end users of IFMIS Next Gen. Indicative aspects to be covered as part of the communication strategy include –</p> <ul style="list-style-type: none"> • Changes (if any) to users' current roles and responsibilities • Onboarding IFMIS users on to IFMIS Next Gen • Handholding support to users through trainings, FAQs, user manuals (textual and videos) and other required documents
<p>Track 2:</p> <p>Wave I - Operation and Maintenance of IFMIS Next-Gen for <u>11</u> deployed modules</p> <p>Wave II - Operation and Maintenance of IFMIS Next-Gen of all 18 modules</p>	
Operation & Maintenance of IFMIS Next Gen	<ul style="list-style-type: none"> • The SI would operate and maintain IFMIS Next Gen wave I modules under the supervision of CTA or its nominated agency soon after wave I go-live. Post go-live of the remaining modules, the O&M will be for a period of five (5) years, or an extended tenure of maximum 2 years (if required). The Operations and Maintenance phase will start only after the go-live of the respective Waves and will last for the stipulated duration. • The SI would ensure compliance to service levels for IFMIS Next Gen during implementation and O&M period and any upgrade or changes to the components should be accordingly planned by SI ensuring the service level requirements are met during the entire contract period. • The SI will also be responsible for arranging for Annual Technical Support (ATS) and Annual Maintenance Contract (AMC) for all products implemented under IFMIS Next Gen, during the entire operations and maintenance phase and additional 12 months from the date of completion of contract. • Any changes/ upgrades to the software performed during the support phase shall be subject to the comprehensive and integrated testing by the SI to ensure that the changes implemented

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Stages of Project	Description of Activities
	<p>in the system meet the specified requirements and doesn't impact any other function of the system. Release management for application software should also require CTA's approval. A detailed process in this regard should be finalised by SI in consultation with CTA and submitted as a deliverable before commencement of O&M of Wave I modules.</p> <ul style="list-style-type: none"> • Issue log for the errors and bugs identified along with version management for the solution and any change done in the solution shall be maintained by the SI and should be submitted every month or otherwise as agreed with CTA. • The SI, with support from CTA, shall also be responsible for, coordination with SDC on issue triage and remediation, conducting DR drills, performance testing, VAPT etc.
Training and Capacity Building through LMS	SI to deploy training resources to facilitate capacity building and continuous development of end users and drive online and offline trainings for the identified user groups. The deployment of training team will be as soon as modules go live. The SI to train the trainer and CTA staff will be responsible for end user training.
Business Support & Grievance Cell	Set up a dedicated Business Support and Grievance management cell on module acceptance and pilot run of the first set of modules for IFMIS Next Gen including provisioning of requisite tools. The support cell will handle the technical queries and provide guidance and services related to IFMIS Next Gen.
Rule Management Team	Deployment of rule management team and necessary interfaces/enablers by the SI. The typical activities of the Rule Management Team will include business rule creation, impact assessment, rule updation in IFMIS Next Gen and management
Transaction Monitoring and Analytics Cell	Deployment of resources for the Transaction monitoring and analytics cell. The key activities of the cell would include formulating and updating indicators and modules for monitoring of financial transactions within IFMIS Next Gen and flagging any suspicious cases.
Exit Management	<p>The new SI shall provide necessary knowledge transfer and transition support to the incoming SI or Purchaser or its nominated agencies for the next version of IFMIS. The SI will provide shadow support for at least three (3) months and secondary support for an additional three (3) months, at no additional cost to CTA during the period of secondary support.</p> <p>Additionally, the SI should submit Source code, integration code, etc. and documentation to understand the codes</p> <p>The SI should also submit Application installations and Configuration documents</p>

Table 2: Track wise activities

2.2 Track 1: Implementation of IFMIS Next Gen

2.2.1 Implementation Model

Notwithstanding any other clause, the SI should develop modules in a staggered fashion by leveraging agile framework. The SI should plan and take-up various activities like drafting of user stories, sprint planning, daily scrum / stand-up, sprint review, sprint retrospective, backlog refinement, scrum-of-scrums, etc. to ensure that the project timelines are met. The SI should also regularly update various artefacts like product backlog, sprint backlog, etc. and periodically share it with the SPOC / module lead from CTA, to keep a check if all the activities are on the track as per project plan. The indicative priorities and dependencies between modules are provided in the subsequent section. The SI is expected to prepare a detailed roll out plan clearly outlining the sequence of roll out of modules and submit the same to CTA for approval. A visual representation of the implementation model is provided below –

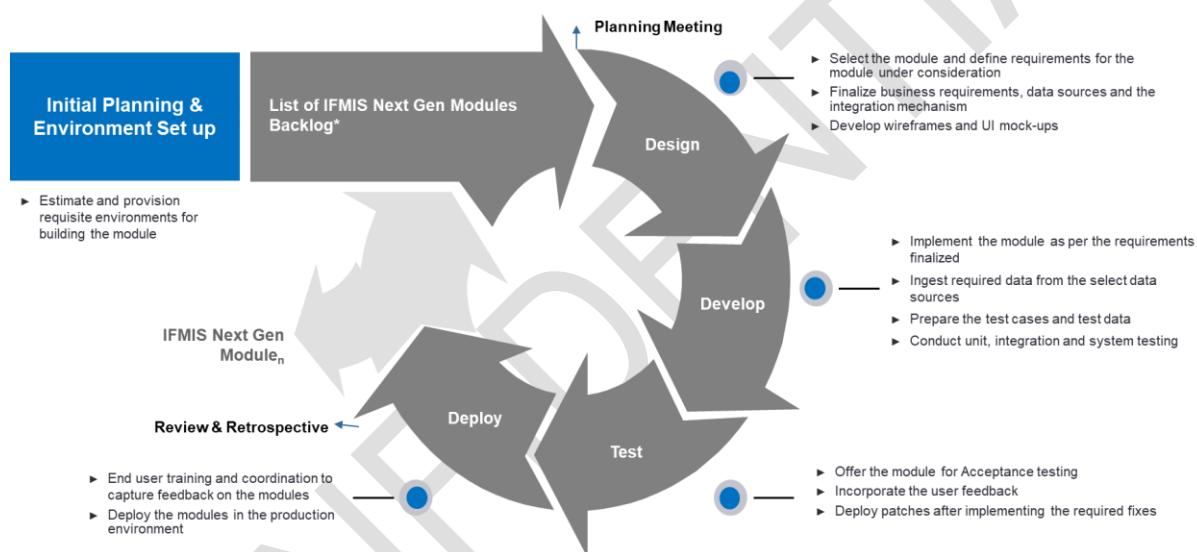


Figure 2: Implementation Model

Bidder should note that parallel run of existing and new setup may be required. The SI should highlight the list of minimum requirements to CTA covering requirements related to of legacy data and knowledge transfer from the existing SI in a time bound manner. The SI should coordinate with the existing SI to ensure data consistency and data integrity. A two way real-time data communication may be required during the process of parallel run. During the parallel run, bidders must also ensure consistency of data in reports generated. Bidders must include the detailed approach for the same in their proposal.

2.2.2 Suggested Sequence of Modules

The sequence of modules is provided in the diagram below –

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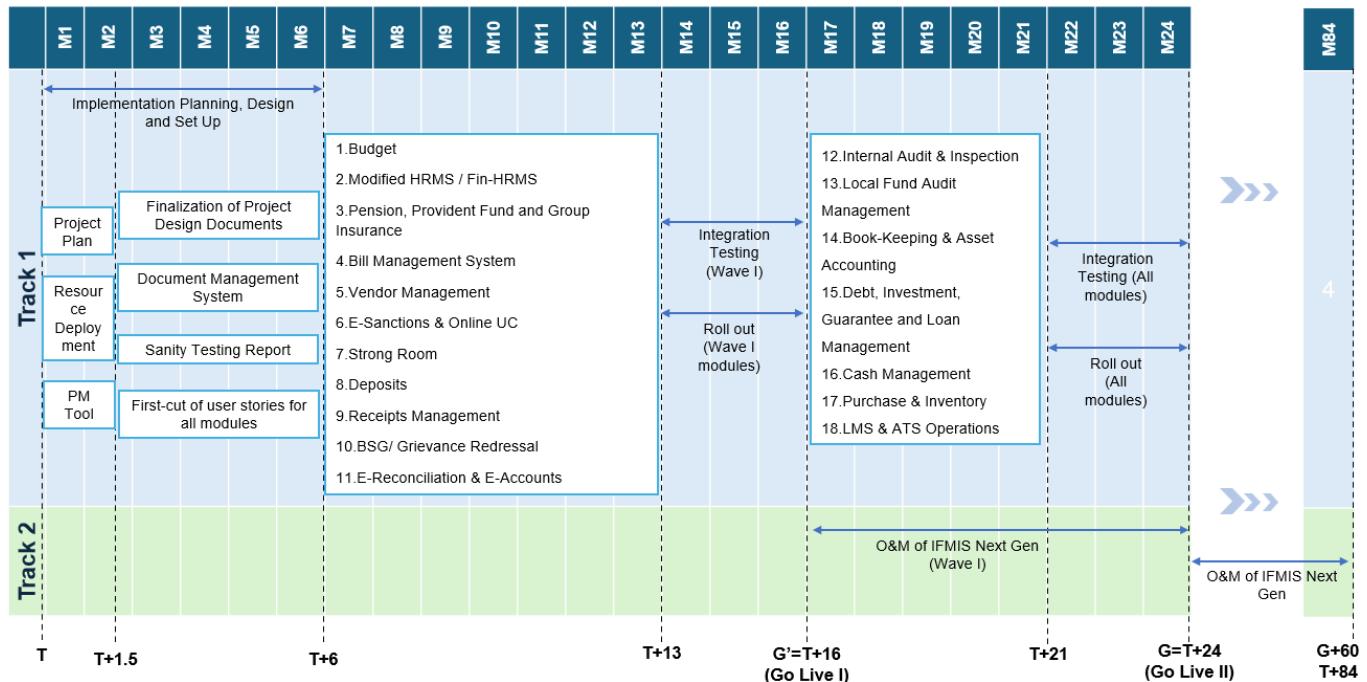


Figure 3: Indicative Sequence of Modules Here 'T' refers to the date of signing of contract with SI. The above diagram is based on the assessment of interdependencies between the modules/ functionalities. The SI may use this as reference and propose sequence during the implementation planning phase and finalize in consultation with CTA.

The individual modules to be completed in 3 months' time. Early completion incentive will only be calculated if the individual module is completed (accepted) in less than 3 months' time.

Sequence of Module Go-Live

Wave	Sequence	Group	Module Name
I	1.	Budget	1.Budget
I	2.	HRMS	2.Modified HRMS / Fin-HRMS
I	3.	Pension	3.Pension, Provident Fund and Group Insurance
I	4.	Expenditure	4.Bill Management System 5.Vendor Management 6.E-Sanctions & Online UC 7.Strong Room 8.Deposits
I	5.	Receipts	9.Receipts Management
I	6.	BSG	10.BSG/ Grievance Redressal
I	7.	Accounts & Audit	11.E-Reconciliation & E-Accounts

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<u>Wave</u>	<u>Sequence</u>	<u>Group</u>	<u>Module Name</u>
II		Accounts & Audit	12.Internal Audit & Inspection
			13.Local Fund Audit Management
			14.Book-Keeping & Asset Accounting
I	8.	Debt & Cash	15.Debt, Investment, Guarantee and Loan Management
II			16.Cash Management
II	9.	Purchase & Inventory	17.Purchase & Inventory
II	10.	LMS & ATS	18.LMS & ATS Operations

SI to note the following points with respect to the go-live of modules –

1. The go-live is divided into 2 waves as defined in the table above. The timeline for development and acceptance of each module across both waves is 3 months.
2. Development and acceptance of modules within Wave I and Wave II to be completed as per timelines defined in Section 6 and module wise payment milestones to be applicable upon module acceptance. However, O&M for Wave I will commence as per timelines defined in Section 6, even if individual modules are accepted before the timelines defined in Section 6 by CTA. The same will be applicable with Wave II modules. The O&M of Wave II modules will commence only from. as per timelines defined in Section 6.
3. The dependencies between modules is provided in the table above. The SI should study the same and propose the detailed plan for development and acceptance of IFMIS Next Gen modules as part of the project initiation report.
4. The SI shall be entitled to an incentive in case of early acceptance for each module (less than 3 months' time), but only after following the sequence as depicted in the table above. The calculation of incentive is illustrated at section 7.2.

SI may start work on any module before the stipulated start date as per the approved plan, as long as the development of its predecessors is completed and is accepted.

2.2.3 Roll-out Strategy

1. The SI shall submit a roll out strategy to CTA office for IFMIS Next Gen to CTA office at as per timelines defined in Section 6 for Wave I and Wave II. The SI shall discuss and finalize the roll out plan in consultation with CTA.
2. The SI shall facilitate pilot test run of Wave I modules and Wave II modules as per timelines defined in Section 6.

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3. The pilot test run may be conducted in a geographically phased manner at multiple Treasuries/Pension offices/ Local Fund Audit offices/ divisions etc. in MP as per CTAs requirements.
4. During the pilot test run phase, the SI shall be responsible for data migration from IFMIS 1.0 or other related legacy databases to IFMIS Next Gen, facilitating field validation, change management, user training and handholding of end users etc.

During the pilot test run phase, SI shall be responsible for making end users hands-on onto the IFMIS Next Gen functionalities / features. End users shall provide feedback on these functionalities / features and will get acquainted themselves with the new functionalities / features through hands-on approach.

5. The SI should resolve the issues reported by the end users during the pilot test run phase as per SLAs.
6. During the pilot test run phase, the end user will continue to use the existing IFMIS 1.0 for carrying out their work. IFMIS Next Gen will only be available for getting users onboarded and learning the system in order to prepare for the switch from old to new system on final roll-out (as per timelines defined in Section 6) Once the pilot test run phase is complete, the SI should facilitate final roll-out by the cut over to IFMIS Next Gen for all end users at as per timelines defined in Section 6 (Wave II). SI shall plan and conduct the holistic data refresh (synchronization) from IFMIS 1.0 to IFMIS Next Gen accordingly. At as per timelines defined in Section 6 ,existing IFMIS 1.0 shall be decommissioned.

2.2.4 Implementation Planning and Setup

1. Soon after the onboarding, the SI shall submit an inception report consisting of a detailed project plan for all iterations, user acceptance, pilot and roll out plan, security standards for application, support required and dependencies till the final go-live of the system. The plan should be submitted as per the timelines defined in section 6.
2. The SI will provide the list of hardware required and work with SDC (with support from CTA) to get the provisioning complete. The list of services available with SDC is annexed in section 10.
3. The SI should adopt the agile framework for development and plan development cycles accordingly.
4. The phase will also include design of the overall solution architecture, high level design documents etc. The architecture should be designed as per leading architectural principles and design considerations given in section 4.2. The solution architecture should include the overall application design application architecture, data flow architecture, security architecture, integration architecture. These documents should be reviewed and approved by the CTA.
5. The SI should also finalize the security standards for IFMIS Next Gen.

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6. This phase will also include provisioning of necessary software and environments before initiation of development activities. SI would need to appropriately size the solution for successful operations, meeting the SLMs, for the entire contract period.
7. The SI shall access the Non Production ,DC, DR sites provided by SDC to provision the requisite infrastructure, software and the environments for development and testing.
8. Non Production, DC, DR & Near DR Site Setup – All the activities connected to setting-up of Non-Production, Data Centre & Disaster Recovery Centre (with hardware and network being provided by SDC). The locations for Non-Production, DC, DR and Near DR Site are provided in section 4.3.
9. The segregation of responsibilities between SI and SDC are provided below –

SI Responsibilities	SDC Responsibilities
Sharing the sizing details with SDC	Provisioning of VMs based on the sizing details provided by the SI
Provision of necessary application software and environments on the VMs provided by SDC	Provide requisite access to SDC premises to the SI for set up and operations of IFMIS Next Gen
	Hardware and network connectivity will be provided by SDC
	All Environments to be enabled in MP SDC based on prevailing state guidelines
Application-level support (above OS level) shall be provided by the SI.	SDC to provide helpdesk support for infrastructure related issues and share SLA reports with CTA office

Table 3: MP SDC and SI Responsibilities

The detailed responsibilities are provided in Section 10.

10. The other activities during the planning stage are as follows:

- Study system dependencies
- Plan development cycles including number of iterations, timeline for each iteration, timeline for activities within each iteration, modules planned for roll out under each iteration, resource provisioning for each iteration, etc.
- Deploy necessary software and get the environment ready for development and testing
- Sanity testing of the environments to confirm that all the production and non-production environment are operational as per project requirements.
- Deployment of DMS and Project Management Tool for maintaining all the project documents, obtaining approvals, collaboration between users, seeking sign off etc.
- Provisioning of necessary environments before initiation of development activities
- Setup DevSec Ops tools and agile tools

2.2.5 Activities within Each Iteration

2.2.5.1 Requirements Gathering & User Story Creation

1. The SI should identify module requirements, prioritise them and create user stories, customer journeys for implementation.
2. The SI is required to identify the integration requirements and data sources required for implementing these user stories.
3. The requirement gathering exercise should cover (but not be limited to) workflows, business rules, fields, validations etc
4. The SI should prepare all necessary test plans (including test cases) and scenarios.
5. The SI shall also design the User Interface (UI) mock-ups and wireframes, etc. The SI should consult CTA while developing the user interfaces and design the interfaces as per the CTA's requirements. This will include standardization of forms and validation checks.
6. Upon submission of user stories, approval shall be provided within 7 days of walkthrough, post which the SI shall initiate development without fail.
7. The requirements should be formulated in alignment with applicable rules and relevant acts prevailing in the state. Relevant acts and rules are provided in section 11.3
8. The development of mobile application and Emerging Technology related use cases shall be done by the SI alongside the web application development.

2.2.5.2 Development

1. Based on the approved design and finalized requirements, the SI should undertake development of the solution. The SI may follow an agile approach towards development of modules with secure coding.
2. The SI should maintain and deploy the continuous integration and continuous deployment (CI/CD) pipeline using the relevant DevSecOps tool.
3. The team should publish various progress reports from time to time based on a pre-defined frequency agreed with CTA.
4. The development/ configuration process should ensure that the standards specified during the design phase are adhered to during the entire cycle.
5. The SI should update the requirements - mapping the software components developed/ customized with the requirements specified at section 3.
6. The SI, with support from CTA, should coordinate with the external data source teams to develop and operationalize relevant APIs for integration. In case the external source

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is not available / ready for API based integration there should be a facility to input data manually (using custom designed front end screens) into the system.

2.2.5.3 Testing

1. The SI should conduct thorough and systematic testing including unit testing, integration testing, functional testing, boundary value testing, performance testing security testing, regression testing, load testing, etc. in line with industry standards and best practices.
2. The SI is expected to provision the necessary tools for all tests envisaged for IFMIS Next Gen.
3. The SI is required to prepare proper documentation on test deliverables (strategy, plan, design, test cases, and specifications etc.) and submit to CTA in order to commence the User Acceptance Testing for the proposed solution.
4. Based on the requirements, SI should prepare all necessary Test Plans (including test cases), i.e., plans for Unit Testing, Integration and System Testing and User Acceptance Testing.
5. Test cases for UAT would be developed by SI and submitted to CTA for review and approval.
6. The SI is required to make all necessary arrangements for testing (integration, system, functional and user acceptance) including the preparation of test data, scripts where necessary
7. A comprehensive mobile application(s) testing should also be performed as part of UAT. The test plans, test cases and results for each of the phases should be shared by SI with CTA.
8. SI should support in third party testing of the system.

2.2.5.4 Data migration

1. The SI should submit the data migration approach encompassing the complete migration strategy and detailed plan stating data source and destination, details of change in data types after migration etc.
2. The migration strategy should include verification of data for integrity, consistency, completeness, availability of data in new system
3. The SI should commence legacy data quality assessment and remediation in consultation with CTA
4. The SI should design data migration processes for optimal performance and scalability

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5. The SI should establish the foundations of Data Governance upfront, including defining data ownership, data definitions and data standards, data retention protocols etc.
6. The SI shall ensure migration of complete data hosted in IFMIS and any legacy systems including – transactional data, operational data, emails, documents etc to IFMIS Next Gen.
7. Data must be reconciled at each stage of the migration (extract, transformation and load)
8. The data migration process must be robust enough to withstand disruptions or paused for business events
9. The SI should conduct a phased migration that is aligned with the overall implementation plan for IFMIS Next Gen
10. The SI should conduct structured rounds of testing to identify legacy data issues and provide quality assurance of the data migration routines. Testing will include a full, end to end, mock run of the data migration processes
11. The SI should employ a cut-over approach that will reduce risk by completing the bulk of the data migration in advance of final go-live, with incremental updates being used to keep the new system in sync with changes in the legacy systems.
12. The SI should also provision templates or utilities for data cleaning. Any data which is required in IFMIS Next Gen and not available in legacy system may be allowed to be entered manually through a frontend form, in consultation with CTA.
13. The SI should ensure that all the data is migrated from SFMS, C-SFMS, FMIS, IFMIS 1.0 and other legacy databases to IFMIS Next Gen. All legacy databases finalized with CTA should be migrated to IFMIS Next Gen.
14. Post migration, the SI shall validate the data migration activity to ensure integrity, completeness, consistency availability of data in IFMIS Next Gen.
15. Data migration from existing to new setup must be ensured smoothly and efficiently without any data loss of information, transactions, records and documents.
16. SI shall migrate the complete IFMIS 1.0, C-SFMS, SFMS, FMIS and other legacy databases to a separate IFMIS Next Gen staging database in SDC soon after the project onboarding as per timelines defined in Section 6.
17. Scope of data migration involves migrating master and transaction data from legacy application(s) or from existing physical registers or adding in new masters which are neither present in legacy database nor in physical registers. Data entry shall be done by the user approved by DTA using format/workflows developed by SI, as per instructions by the competent authority.
18. The SI shall be responsible for appropriate data sizing and coordinate with the existing SI to ensure data consistency.

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19. The SI shall agree on a pre-defined refresh frequency (synchronization) with CTA for IFMIS 1.0 data to be periodically refreshed into IFMIS Next Gen staging database during initiation, module acceptance, pilot test run and roll-out. The SI shall ensure that the data is refreshed as per the agreed frequency, real-time or batch (hourly, daily or others) as per the requirements of CTA
20. The SI should provision requisite tools, manpower etc. to carry out this incremental data refresh.
21. At an indicative level, SI shall be responsible for the following activities related to data migration –
 - a. Identification of sources from where data is to be migrated in consultation with existing SI.
 - b. Identification of data which includes Master Data and in-transit and committed transactions from legacy systems/physical registers.
 - c. Collection of data through templates in consultation with CTA.
 - d. Data upload after proper cleansing of data.
 - e. Identify discrepancies and apply data correction.
 - f. Preparation of validation routines for proper verification before migration sign-off.
 - g. The SI shall finalize the approach in consultation with CTA.
22. SI should certify completeness of data in IFMIS Next Gen, post the migration from legacy database.

2.2.5.5 Module Acceptance

1. CTA or its nominated agencies shall perform a detailed User Acceptance Testing (UAT) for all the modules as per timelines defined in Section 6 .
2. The SI should prepare and provide data for the UAT. SI should finalize the UAT strategy in consultation with CTA.
3. The indicative acceptance criteria is provided in section 9 and this shall be discussed and finalized with CTA during the planning phase prior to commencement of acceptance testing. The SI should support CTA in this process.
4. The SI should provide and ensure all necessary support to the CTA or its nominated agencies for conducting the UAT including sharing necessary project documentation, source code, systems (designed & developed), testing strategy, test cases developed for the project executable, test results, etc. The SI is required to facilitate this process and it shall be incumbent upon the SI to meet all the criteria for testing. However, the responsibility of carrying out the UAT will be with the CTA and its nominated agencies.
5. A UAT shall be deemed as complete if and only if all the steps involved in the test are completed covering all the concerned stakeholders
6. The output of modules of IFMIS Next Gen UAT shall be cross-checked with output of corresponding modules of IFMIS 1.0 during Wave I UAT.

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7. Integrated UAT of Wave I shall be conducted as per the timelines defined in Section 6 to check the interdependencies, interlinkages, interoperability among all modules / functionalities. Testing of integrations with external systems should also form a part of UAT.
8. SI should prepare and submit UAT Reports including –
 - a. Various tests performed
 - b. Test results
 - c. Deviations
 - d. Resolution reports for the issues identified during testing
9. CTA may appoint a 3rd party auditor/ tester for auditing/ testing of any aspect of IFMIS Next Gen project. SI needs to support department with audits/test and address the audit points.
10. SI should conduct an internal audit of the module being rolled out in consultation with CTA.
11. Please refer to the acceptance criteria given in Section 9 of this Volume

2.2.6 Final Release of IFMIS Next Gen and Go-live

1. After the successful development and roll out of the last module, the SI shall offer the complete integrated system for validation, followed by Final go-live of the complete IFMIS Next Gen.
2. Any changes in the user stories before final acceptance go live (Wave I and Wave II as per the timelines defined in Section 6) within the scope of work defined in the RFP will not be considered as a change request.
3. IFMIS Next Gen modules are highly interdependent and are expected to be closely integrated. If during the development of modules, there are dependencies on the already completed live modules and due to which modifications are required to the completed live modules, then those changes will not be considered as Change Requests.
4. Any requirement beyond the scope of work outlined in the RFP will be considered as CR.
5. SI shall finalize the strategy for Final go-live in consultation with CTA.
6. A third-party agency may be appointed by CTA for final validation and certification The cost of third-party agency appointed shall be borne by CTA.
7. SI should also perform load/stress testing before go-live. SI should bring its own tools for the load/stress testing.
8. SI should conduct performance testing of IFMIS Next Gen prior to Go Live

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9. The SI should provide for OEM support and certification for correct deployment configuration and working of all products deployed, in line with industry best practices and usage of the product before final acceptance and final go-live.
10. The SI shall facilitate beta testing wherever applicable.
11. The SI should provide support to end users in transitioning to the new system through trainings, FAQs, user manuals etc.

2.2.7 Change Management

The change management process is primarily aimed at addressing the communication requirements at the time of go-live of modules and onboarding of all stakeholders involved in usage of IFMIS viz employees of CTA, FD, all Directorates, Departments, Treasuries, Pensioners, Vendors, Citizens, Beneficiaries, etc. The SI is responsible for planning outreach and training sessions, preparing content, setting up **Learning Management System (LMS)** and conducting train-the-trainer session to facilitate change management.

These activities shall commence as soon as modules go live. A dedicated team should be deployed for managing change and handholding end users, including visiting their offices along with CTA officials for a hands-on training.

1. The SI will identify learning requirements, prepare a training plan and content in consultation with CTA and execute the plan. The training calendar to be prepared by the SI should include the details of the batch size, mode of training, duration etc.
2. The SI shall provide trainings to master trainer on the application functionalities of IFMIS Next Gen. An indicative list of training courses is provided below –

Stakeholders	Indicative trainings
FD	Application details, Training on Business Intelligence and dynamic reporting
CTA	Application details, User Management and Role Based Access, Functional aspects of the system, Dynamic reporting, DevSecOps, Agile, Testing strategies etc.
JD Offices	Application details and functional aspects of the system
Treasuries	Application details and functional aspects of the system, Dynamic reporting
Other Directorates under FD	Application details, Dynamic reporting
State Departments	Application details, Dynamic reporting

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Stakeholders	Indicative trainings
Other Departments users as relevant	Application details, Dynamic reporting
CTA officers –Technical	Application details, Technical details, API details, Integration requirements, System operations, SLM tool functioning, DevSecOps methodology and tools with practical applications

Table 4: Indicative Trainings to be provided

3. The SI shall also be responsible for preparation of Training aids. The SI will prepare all the requisite audio/ visual training aids for successful completion of training for all stakeholders/ persona. These include the following –
 - Training manuals for end users and officials
 - Presentations
 - User manuals (document & video-to be available within the modules)
 - Operational and maintenance manuals for the modules
 - Application/modules training prototype for hands on training using dummy data
 - Regular updates to the training aids prepared under this project
 - FAQs
4. The training and training aids should be specifically delivered to address training needs of different stakeholder groups/ persona.
5. The SI will maintain a copy of all the training material on the Portal/website and access will be provided to relevant stakeholders depending on their need, role and access privileges. The access to the training content on the portal would be finalized with CTA.
6. These resources would need to travel to all district offices of treasuries to support CTA in providing in-person hand holding support to IFMIS users during pilot run / system roll out / adoption / go-live. On indicative level it may be assumed that 1 person may need to undertake 2 trips for 2 days each to all district during as per timelines defined in Section 6 . These trips may be conducted in parallel to all district-, SI must plan accordingly. The actual travel plan would vary based on actual needs of the CTA in consultation with CTA.

For any additional travel required outside Bhopal beyond the above stated requirements, SI will be required to take prior approval on the estimated travel cost

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from CTA. SI will be reimbursed on the actual cost incurred post submission of requisite proofs to CTA.

7. The detailed training requirements are provided in section 2.3.5.

2.3 Track 2: O&M of IFMIS Next Gen

2.3.1 System Support & Maintenance

1. Post final go-live of IFMIS Next Gen, the new SI will operate and maintain IFMIS Next Gen under the supervision of CTA or its nominated body for a period of five (5) years or an extended tenure if applicable.
2. The SI should ensure compliance to service levels for IFMIS Next Gen as indicated in section 8 of this RFP and any upgrade or changes to the components should be accordingly planned by SI ensuring the service level requirements are met, at no additional cost to the CTA.
3. The SI will be responsible for arranging for ATS and AMC to CTA during the entire operations and maintenance phase for the products provided by respective OEMs.
4. Any changes/upgrades to the software performed during the support phase shall be subject to the comprehensive and integrated testing by the SI to ensure that the changes implemented in the system meet the specified requirements and doesn't impact any other function of the system.
5. The SI should ensure that any planned downtime should be arranged only during non-business hours, in consultation with CTA.
6. Release management for application software should also require CTA's approval. A detailed process in this regard should be finalised by SI in consultation with CTA and submitted as a deliverable.
7. On an ongoing basis, SI shall be responsible for troubleshooting issues in the solution to determine the areas where fixes are required and ensuring resolution of the same. The SI shall address all the errors/bugs/gaps in any functionality in the envisaged system implemented by the SI vis-à-vis the submitted and approved and product backlog at no additional cost during the operations and maintenance phase.
8. Issue log for the errors and bugs identified in the solution and any change done in the solution shall be maintained by the SI and should be periodically submitted to CTA.
9. SI shall facilitate 3rd Party testing, in consultation with CTA whenever there is a major change to the application
10. The SI shall also be responsible for other operations and maintenance activities for IFMIS Next Gen as listed below:

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- Monitoring and coordination for Backup of data by MPSeDC and restoration of the same.
 - Quarterly submission of source code and documents as per the defined policies.
 - Monitoring and enhancing the performance of scheduled backups, schedule regular testing of backups and ensuring adherence to related retention policies as defined by CTA.
 - Prompt execution of on-demand backups of volumes and files whenever required or in case of upgrades and configuration changes to the system.
 - Coordination with SDC on the following aspects (indicative list)
 - Issue triage and remediation of tickets
 - Raising tickets with SDC and coordinating for resolution of the same
 - Conducting DR drills
 - Performance testing
 - Real-time monitoring, log maintenance and reporting of backup status of all the environments provisioned by MPSeDC and communicate the same to competent authority on weekly/ monthly basis.
11. The SI may also be required to operate the system from the DR site. In such a case, the SI will be intimated 15 days (or otherwise as notified by CTA) prior to the switch over to the DR site. The system should operate from DR until CTA asks to switch back to the DC.
12. All planned or emergency changes to any component of the system shall be through the approved change management process submitted by the SI as a part of project deliverables given in section 6. The SI needs to follow all such processes based on industry best practices.
13. The SI shall also ensure updation and documentation of the software system ensuring that –
- Source code is documented and made accessible to CTA each quarter.
 - Functional specifications are documented.
 - Application documentation including updation Functional Requirement Specifications (FRS) and user stories are updated to reflect on-going maintenance and enhancements, in accordance with the defined standards.
 - User manuals and training manuals are updated to reflect on-going changes/ enhancements.
 - Standard practices are adopted and followed in respect of version control and management.

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14. The SI should define, develop, implement and adhere to IT Service Management (ITSM) processes aligned to ITIL framework for all the IT services defined and managed as part of this project
15. The SI shall implement and maintain Standard Operating Procedures (SOPs) for the maintenance of IFMIS Next Gen based on the policies formulated in discussion with CTA and based on the industry best practices/ frameworks. The SI shall also create and maintain adequate documentation/ checklists for the same.
16. SI to ensure resilience of IFMIS Next Gen, adherence to SLA, coordination with SDC for DR drill to ensure continuity of the system.

2.3.2 Back-up & Restoration Support

1. SI shall prepare the backup and restoration plan and perform validation of restoration requests.
2. The SI should liaise with SDC for backup of storage as per the defined policies. The SI should identify back up restoration requirements in consultation with CTA.
3. The SI should ensure Monitoring and enhancing the performance of scheduled backups, schedule regular testing of backups and ensuring adherence to related retention policies as defined by CTA.
4. SI shall be responsible for coordination with SDC to ensure proper integration of all components of IFMIS Next Gen across DC, Near Site and DR sites and ensure proper operations and availability in case of Disaster.

2.3.3 User Profile & Account Management

1. The SI shall be responsible for routine changes that include user and access management.
2. SI shall provide user support in case of technical difficulties in use of IFMIS Next Gen, answering procedural questions, providing recovery and backup information, and any other requirement that may be incidental/ ancillary to the complete usage of the application.
3. The SI shall perform user ID and group management services. The user ID naming and protocols shall be designed and implemented for all IDs. Such naming conventions and protocol shall be signed-off with the CTA.
4. The SI shall maintain access controls to protect and limit access to the authorized end users of CTA
5. The services shall include administrative support for user registration, creating and maintaining user profiles, granting user access and authorization, providing ongoing

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user password support and providing administrative support related to IFMIS Next Gen.

6. System administration tasks such as managing the access control system, creating and managing users, deletion, access right management etc.
7. The envisaged system should provide a super admin user to CTA or its nominated agencies to allow user creation, access rights management, approval and other related activities. This should be allowed through the RBAC tool as defined in section 4.5.5.
8. All requests for generation of new reports should be managed through the system. In case generation of any report requires prior approval, the approval workflow should be configured in the system itself.

2.3.4 Portal Management

1. The SI is required to maintain/update the web portal of CTA and IFMIS Next Gen on regular basis for the period of the contract.
2. The SI is required to ensure that the portal meets GIGW, STQC and other government standards continuously.
3. SI shall regularly design, upload and update the content of the portal.
4. The SI should ensure performance tuning of the system to ensure proper functioning of the portal.
5. The SI shall be responsible for updating content (text, graphics, audio, video) on the website as per direction given by CTA.
6. Ensure adherence to the GIGW guidelines and any other guidelines issued time to time by Government of India / Government of MP. The SI shall also submit a compliance report against these guidelines to CTA as defined in section 6.

2.3.5 Training & Capacity Building

The SI shall deploy resources to facilitate training of master trainers (identified by CTA) for continuous development of all user groups (Treasuries, Departments, Directorates, and other stakeholders etc.) through online and offline trainings. SI shall provide necessary support to CTA in facilitating the training sessions. The training sessions shall be conducted and spread evenly throughout the year as and when required and the training calendar should be submitted by the SI and approved by CTA. The training sessions related to change management should be initiated well in advance before the module-wise go-live. For physical trainings, CTA will make the arrangements related to availability of the training location, writing material, refreshments, projectors and other related items.

A. Trainings to be Conducted

The key activities envisaged to be conducted by the Training team are as follows –

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1. Identification of trainings to be conducted
2. Publishing a quarterly training calendar and issue notifications for the same to relevant user groups. The training calendar to be prepared by the SI should include the details of the batch size, mode of training, duration etc.
3. Publish a quarterly training delivery and feedback report.
4. The duration of training should be sufficiently long for effective and meaningful assimilation of training content by an average user.
5. Facilitate classroom trainings and also set up Learning Management System (LMS)

The SI should provide 1 introductory training on the proposed Agile methodology for development for maximum 50 resources (nominated by CTA) within 7 days after onboarding on to the project. The training will be conducted in-person and the training location and facilities required will be finalized in consultation with CTA. The training shall be conducted in batches of 2. The training should be for a duration of 5 business days and shall be conducted in Bhopal. The boarding, lodging, venue and consumables (printouts, food etc.) will be made available by CTA. Training material should be provided by the SI in soft copy format. After the training, the SI should conduct an output assessment and provide completion certificates (soft copy) to the successful candidates. SI should include the cost for the same in their commercial bid and the payment will be made as per actuals.

B. Learning Pedagogy

The learning pedagogy shall be based on different types such as online self-paced training/E-Learning, online instructor led training and offline training to be developed. The duration of training shall be finalised jointly by the SI and designated CTA officials. However the period should be sufficiently long for effective and meaningful assimilation of training content by an average user.

C. Periodic Review

The feedback of trainees shall be recorded after every training delivered through any medium - online or offline. Periodic analysis shall be conducted as agreed upon with CTA and Key Performance Indicators (KPIs) should be monitored for the trainers. The SI shall also publish a dashboard for the same.

D. Continuous Assessment of Trainees

1. A periodic maturity level analysis of trainees shall be conducted from time to time to assess the impact of the trainings conducted. This assessment should be facilitated through IFMIS Next Gen.
2. Assessment level and passing thresholds should be decided in consultation with CTA and configured in the LMS.
3. For assessment needs, a question bank should be available in the LMS.

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4. The training team should conduct a training need analysis of all the concerned user groups and draw up a systematic training plan in line with the overall project plan and continuous feedback system for improvements on the shortfalls.

Following are the training requirements for IFMIS Next Gen –

<u>Phase</u>	<u>Number of Training Sessions (Physical)</u>	<u>Approx. Batch Size</u>	<u>Indicative Training Duration</u>	<u>Expected Output</u>
Wave I Go-Live) as per the timelines defined in Section 6	Up to 52 sessions	50 officials	8 hours per session	Disseminate understanding of IFMIS Next Gen module included in Wave I
Wave II Go-Live as per the timelines defined in Section 6	Up to 52 sessions	50 officials	8 hours per session	Disseminate understanding of IFMIS Next Gen module included in Wave II
O&M of IFMIS Next Gen	Up to 5 sessions every quarter	50 officials	8 hours per session	Disseminate understanding of IFMIS Next Gen module included in Wave I and activities related to O&M of IFMIS Next Gen

Trainings will be conducted in Bhopal and other Districts. The indicative list of training sessions and the target user groups are provided in table 4, section 2.2.7 of Volume I of the RFP. The SI shall also conduct an assessment post these trainings to gauge the understanding of target users. The assessment report(s) shall be submitted to CTA and shall form a basis for planning the content for subsequent trainings.

2.3.6 Business Support & Grievance Cell

The envisaged IFMIS Next Gen ecosystem shall include a dedicated Business Support & Grievance (BSG) Cell at DTA office/other specified location at Bhopal with adequate functional and technical resources (minimum 14 Resources from as per timelines defined in Section 6 onwards during the Track I implementation phase and should continue for the 1st two years of Track II (O&M phase). From third year of O&M, the SI shall deploy minimum 7 resources for the remaining contract duration). DTA office shall provide seating space along with

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furniture, electricity, internet connection and water supply for the resources. Bidder may estimate and propose additional resources based on the requirements given in the RFP and include the same in their technical and commercial bids. BSG resources will be based at CTA office. The resources staffed in this cell shall address end user grievances, enable status tracking and serve as a communication channel with the corresponding module owners of CTA and other stakeholders. A core component of the BSG shall be a Service Management tool. The Business Support & Grievance Cell should facilitate both inbound and outbound communication to user groups of IFMIS Next Gen. Outbound communication will typically be used for following up with end users regarding their grievances, communication as part of a change management campaign and other similar activities. Inbound communication will typically encompass registration of grievances through the ticketing tool and / or following channels –

- Chatbot with live agent chat option
- Forms available in the web portal
- Mobile Application
- E-mails
- WhatsApp
- Calls to a direct line at CTA office

The key functionalities to be enabled as part of Business Support and Grievance Cell are provided in section 2.3.6. The SI shall provision an Automated Call Distribution solution to manage incoming calls to the BSG.

The SI shall analyse the repeat grievances and conduct a Root Cause Analysis (RCA) and create a solution to remediate the root cause. This exercise of analysis and submission of report shall be conducted every quarter. A select list of issues shall be finalized in consultation with CTA for remediation.

Bidders to provide the breakup of all proposed profiles for BSG in their technical and commercial bid, . The number for required BSG resources is subject to change based on the project needs and the SI may be required to increase or decrease BSG team size as required by CTA. In case of increase or decrease in team size, payments to the SI shall be made on pro-rata basis, based on the manpower rates provided by the SI in their commercial bid Not withstanding anything else stated in the RFP, these provisions supersede any other provision given in the RFP.

2.3.7 Rule Interface & Management Team

The envisaged IFMIS Next Gen should be equipped with a Rule Interface which should allow authorized users to configure and manage business rules and their applicability to various processes in the system. The SI shall deploy a Rule management team lead as per timelines defined in Section 6,to ensure configuration of rules in IFMIS Next Gen. The SI should coordinate with CTA to identify the interdependencies between rules and user stories. The SI shall maintain a repository of the same and update periodically. The key functions of the Rule management team are provided in section 3.12.7.

2.3.8 Transaction Monitoring & Analytics Cell

The department intends to set up a centralized Transaction Monitoring, Analytics and Fraud Prevention team. All high-risk transactions will be flagged and made available to this team through suitable reports. The Transaction Monitoring & Analytics Cell shall be staffed with resources from the SI team (minimum 2 resources including a team lead) and the cell shall be monitored closely by designated officials from CTA and/or FD. The responsibilities of the Transaction Monitoring & Analytics Cell are included in section 3.12.6.

2.3.9 Exit Management

The responsibilities of the SI pertaining to exit management after the end of the contract for IFMIS Next Gen are as follows –

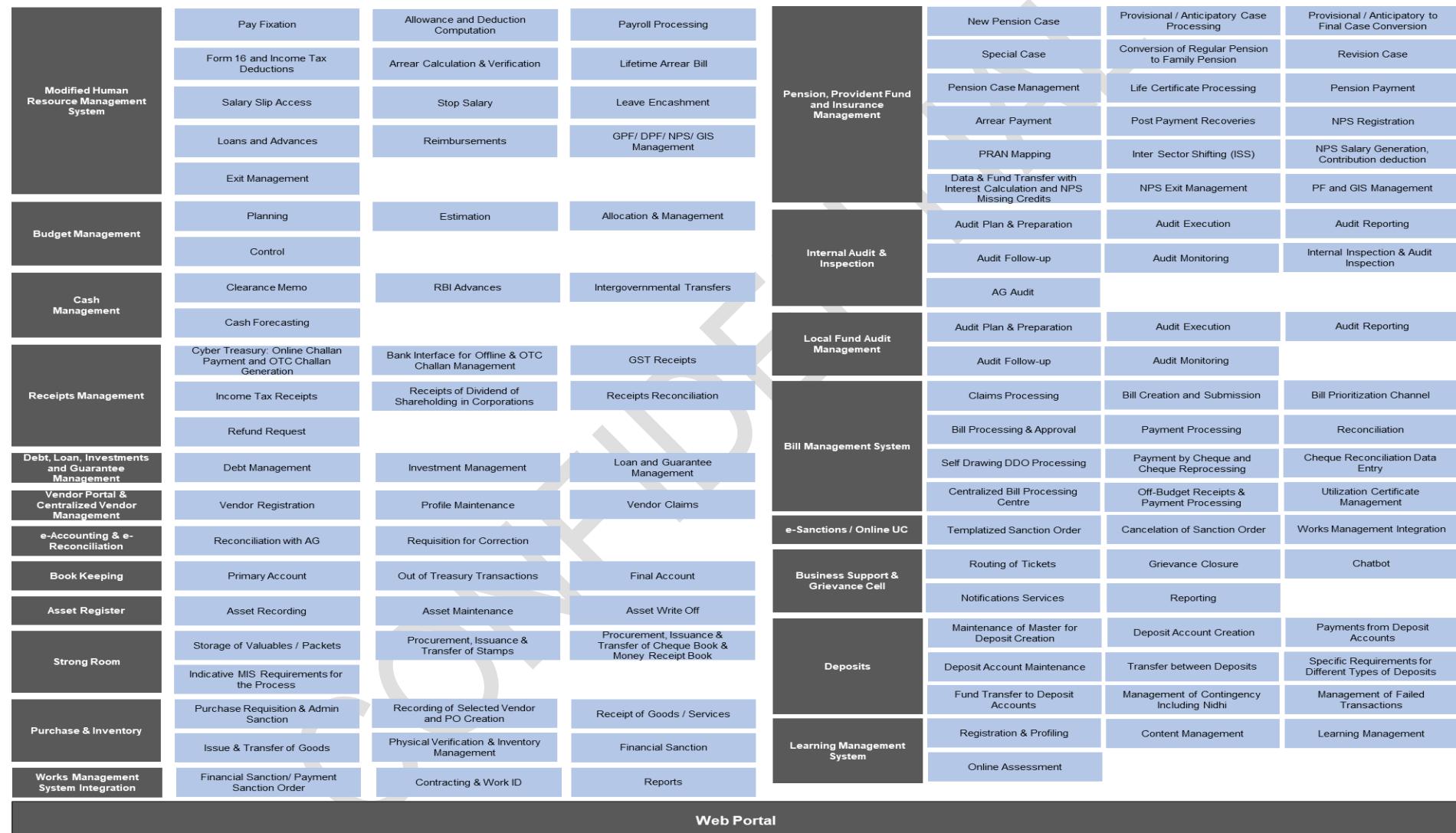
1. The SI shall submit a structured and detailed transition and exit management plan (for IFMIS Next Gen) within three (3) months of on-boarding.
2. The SI needs to update the transition and exit management plan at the end of each year and one (1) year before the contract expiration; and submit the same to CTA for approval and sign-off which shall supersede all the earlier plans.
3. All risk during transition stage shall be properly documented by the SI and mitigation measures should be planned in advance so as to ensure a smooth transition without any service disruption.
4. Service level metrics' ownership, during exit, shall belong to the SI.
5. At the end of the contract period or during the contract period, if any other agency is identified or selected for providing services related to the SI's complete or partial scope of work, the SI shall ensure that a proper and satisfactory handover is made to the other agency. This shall include transfer of all assets (Hardware, software and all the documents). The SI shall adhere to the updated exit management plan submitted during the course of the project.
6. The SI shall ensure business continuity i.e. business as usual of IFMIS Next Gen during exit management. The SI shall be in complete ownership of all scope related items.
7. SI shall ensure that AMC/ATS shall be taken up to 1 year from the end of contract for all items deployed for IFMIS Next Gen.
8. All other open issues as on date of exit shall be properly documented, listed and provided to CTA.
9. The SI shall provide necessary knowledge transfer and transition support to the incoming SI for the next version of IFMIS Next Gen or to the Purchaser or its nominated agency. The key handover activities are indicated below–

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- a. Submission and approval of the updated transition plan.
 - b. Complete documentation for the entire system handed over to the CTA/identified agency/new SI.
 - c. Handover of all AMC/ATS support related documents, credentials etc. for all OEM products supplied/maintained in the system.
 - d. Handover MoUs signed for taking services taken from any of the sub-contracted agencies.
 - e. Handover of the list of complete inventory of all assets created for the project.
 - f. Assisting the new SI/CTA with the complete audit of the system including licenses and physical assets.
 - g. Detailed walk-throughs and demos for the solution.
 - h. Hand-over of the entire software including source code, program files, configuration files, setup files, project documentation, user IDs, passwords, security policies, scripts etc. SI should update/ upgrade all their products with latest available software /products before exiting.
 - i. Hand-over of the user IDs, passwords, security policies, scripts etc.
 - j. Knowledge transfer of the system to the incoming SI for the next version of IFMIS to the satisfaction of CTA per the specified timelines.
10. The SI shall be released from the project once successful transition is completed by meeting the parameters defined for successful transition by CTA.
11. In case the SI fails to observe any of the above points, the SI shall not be released and all the pending payments shall be put on hold till the successful completion of the exit management to the satisfaction of the CTA.
12. The SI shall also be required to adhere to all the above stated exit management requirements in case of termination.

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3 Functional Requirements



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Figure 4: Functional Block Diagram

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Following are the salient points of the envisaged IFMIS Next-Gen functional architecture –

- Will maintain certain registries (e.g. vendor); will extend registries maintained by other applications
- A dedicated Vendor Portal, to provide the Vendor with a provision to register and update their profile, upload, and share their invoices with Departments digitally, track status of payments etc. It will also allow modification of details such as account details, PAN, etc. before- proceeding for claim processing.
- Generation of draft bill inputs from vendor invoices uploaded on Vendor portal leading to reduced manual effort on part of DDO to raise bills.
- Rule driven prioritization of bills. Parameters to be configurable through the system. Configurable green channel for priority bills and committed expenditure. This will allow better management of cash flows, reduce ageing of bills and faster processing of bills, reduced burden on Treasuries.
- Risk profiling of vendors to gauge fraudulent payments to ensure better control over expenditure, and implement preemptive measures for expenditure control
- Monitoring of transactions to identify possible red flags like duplicate transactions, to ensure fewer errors and better monitoring of disbursements
- Online generation of Sanction order and Utilization Certificate. Standard templates to be pre-configured in the system.
- Risk assessment of Units/ Departments for audit planning. System based generation of Audit Plan & Roster, Audit Report from memos. This will reduce the manual touchpoints and ensure faster audit planning and execution.
- Integration with e-HRMIS. Integration between IFMIS and e-HRMIS for managing finance processes and avoid overlap of scope and functionalities between the two systems
- Integration with e-Kuber to handle all payments and receipts and ingestion of Clearance Memo. The information received (Government Payments & Receipts) from the memo will reflect in respective modules and accounts as relevant.
- Envisioned implementation of PFMS SNA (Single Nodal Agency) Account model 4/ Model 1 of alternative fund flow mechanism to have greater visibility of transactions from SNA and transaction should route through as per relevant Gazette Notification. This model will require mapping of SNA accounts with IFMIS to allow payments to beneficiaries.

The entire system is categorized into the following sub-domain areas and modules.

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#	Sub-Domain Area	Module
1.	Accounts and Audit	E-Reconciliation & E-Accounts
2.	Accounts and Audit	Internal Audit, Inspection & AG Audit
3.	Accounts and Audit	Local Fund Audit Management
4.	Accounts and Audit	Book - Keeping & Asset Recording
5.	Budget Management	Budget Management
6.	Debt, Loans, Investment, Guarantee Management	Debt, Loans, Investment, Guarantee Management
7.	Expenditure Management	Vendor Management
8.	Expenditure Management	Strong Room
9.	Expenditure Management	E-Sanctions & Online UC
10.	Expenditure Management	Purchase & Inventory
11.	Expenditure Management	Bill Management System
12.	Expenditure Management	Deposits
13.	Modified HRMS	Modified HRMS
14.	Pension, Provident Fund & Group Insurance Management	Pension, Provident Fund & Group Insurance Management
15.	Receipts Management	Receipts Management
16.	Cash Management	Cash Management
17.	Others	Grievance Redressal
18.	Others	LMS & ATS Operations

Table 5: List of Modules

In case of any gaps in terms of understanding of any processes, rules, domains or functionalities, the overall umbrella guidelines/acts/rules/policies etc. shall prevail.

3.1 Budget Management



Figure 5: Budget Management

Budget module caters to budget planning, estimation, approvals, allocation, management (including supplementary budget, re-appropriation, contingency fund withdrawal, contingency fund recoupment), surrender and monitoring. The key user groups involved are - Finance Department users including Directorate of FMIS, other Departments (DDOs and BCOs), AGMP, PFMS and other agencies. The key functional blocks of the Budget module are defined below –

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- Planning: This functional block encompasses the process of planning the resource envelope available for Budgeting and the ceilings to be defined for Departments at the time of Budget estimation. The key processes within this block are Budget circular issuance by the Finance Department, activation of budget lines, configuration of various rules in the system, etc.
- Estimation: This block includes the process of preparation of estimates by the Departments, review at different levels – Drawing & Disbursement Office (DDO), Budget Controlling Officer (BCO), Head of Department (HoD), Finance Department (FD), Legislative Assembly and finalization of the estimates. The process of supplementary budget estimates is also included within this functional block.
- Allocation & Management: This block refers to the process of allocation of budget, contingency fund withdrawals, recouping of contingency fund, re-appropriation, re-distribution and surrender of budget.
- Control: This block refers to the process of monitoring budgetary spends and enforcing ceilings on the expenditure as per the requirements and cash position of the state.

It is required that all the activities on the system like budget preparation, budget book printing, FS memo, FRBM, etc. should be bilingual (in English & Hindi) and that suitable editing rights should be provided.

3.1.1 Planning

In the current ecosystem, Directorate of FMIS maintains a separate database for conducting ad-hoc analysis on the Budget data. Since a comprehensive database and MIS report formats are already available in the FMIS database, it is envisioned that these data points and templates be migrated to IFMIS Next Gen to allow analysis and reporting within IFMIS itself, without having to access multiple systems. This will also allow maintenance of single source of truth for all data sets.

3.1.1.1 Preparation and configuration of Head of Accounts

1. The envisaged system should allow creation and updation of Head of Accounts (HoA) as per the List of Major, Sub-major and Minor Heads provided by the CGA and Account Codes and structure adopted by GoMP yearly. There should be a dedicated interface available to authorized users of Finance Department to configure the same. A bilingual (English and Hindi) master list of Budget Heads should be maintained in the system. The master data should be maintained up to the Minor Head level and below Minor Heads, all heads should be opened up to the root level by FD only after approval of AG.
2. The system should support in extending the present nomenclature and digit classification to cater to future requirements and modifications to the HoA.
3. In case of correction required in HoA after completion of a financial transaction, the system should allow changes to HoA to be reflected only after approval of Competent Authority defined as per relevant rules. The workflow shall be configured in the system itself.

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4. For each Account Head, the system should allow configuration of tool tips, rules and description to equip users to understand the HoAs better while using them for estimate preparation, bill preparation etc. It must be possible to revise HoA descriptions through the front-end itself. The competent authority for this edit should be the Deputy Secretary, Budget or above.
5. The envisaged system should have the facility to roll over the budget classification structures / Head of accounts to the succeeding year if the same codes and classifications are desired. The start and end date of all codes must be maintained. The system should provide default dates in case no date has been entered.
6. Apart from the Account Heads defined in the standard HoA, the system should also allow relevant users from Finance Department to create a new classification scheme according to parameters like sector, geography etc. and map them to the relevant Account Heads as per the HoA. The system should allow users to extract multiple report basis such classification.
7. The system should allow maintenance of a project/ scheme database based on which new codes can be configured in the Head of Accounts. Entries to this database will be facilitated through a web form.
8. The system should provide facility to partially / fully block the budget head, if required. In addition, there should be option to block single component of scheme or some % of the scheme line.
9. The envisaged system should ensure the following –
 - Downloading option (in multiple formats) of Budget master and data (figures) for original as well as supplementary budget to be available in IFMIS
 - All Budget data to be in parent-child hierarchy.
 - All classification up to Minor Head (MICD) level should be as per LMMH list.

3.1.1.2 Resource Envelope Computation & Budget Circular Issuance

In the current scenario, budget planning processes like computation of overall resource envelope for the state are largely done manually using excel files. Department wise ceilings are defined on an annual basis. The entire process of Budget planning and ceiling finalization happens outside the system. Only the derived values for Departmental ceilings are fed into the system manually by the relevant Budget sections of the Finance Department. Despite availability of a gamut of historical data, there are limited decision support tools within IFMIS currently. In order to address these gaps, IFMIS Next Gen should provide the following functionalities –

1. The envisaged system shall allow Finance Department users to estimate likely available resource envelope of the State in the ensuing year and analyse the data corresponding to past Budget, surrender, re-appropriation, Contingency Fund recoupment, Supplementary demands and other relevant data points to compute Departmental ceilings.

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2. The system **should auto-generate the Department wise ceilings and present it to Finance Department users for review.** The algorithm for this functionality should be developed in consultation with the Finance Department.
3. The methodology for computation of the ceilings **should be configurable** by authorized users through a dedicated interface in the system itself.
4. Also, it is envisioned that the ceilings should take into account the following parameters –
 - **FRBM** parameters - These macro fiscal targets should be the starting point for determining Department-wise ceilings, based on likely available resources, debt servicing, and fiscal deficit/ revenue deficit targets in the medium term
 - Utilization of last 3-5 years' budget by each Department.
 - Any new flagship schemes/ projects planned to be taken up. Procurement plan if any provided by the Departments
 - Localized SDG and other targets of the State
 - Anticipated changes in parameters like Pay Commission recommendations
5. A **scenario modelling module should be provided to Finance Department to analyse the impact of Department ceilings on key fiscal indicators and economic outlook of the state.** The tool should also account for any fiscal aberrations in the past and the overall risk rating for sectors. Additionally, the facility to feed requisite current economic data, like economic survey, economic news, Bloomberg data, etc. which is suitable for the analysis, should be provided, to better utilize the system.
6. A **risk framework should be devised to arrive at a risk rating for various sectors**, which may impact revenue and expenditure of the state. The perceived risk should be shared with the Departments as a **pre-budget advisory through IFMIS Next Gen.**
7. **The system should also allow configuration of standard values like Dearness Allowance (DA) in the system as per the latest pay commission.** The ability to edit these values should be provided to authorized users in the system. In certain cases where the values are fetched from an external system, the system should allow capturing of such data sets and not allow anyone to edit the same in IFMIS unless permitted by the competent authority.
8. **The envisaged system will also provide the option for FD users to map each major and minor head for Grant/loan from Centre with the expenditure head where the fund received through loan/grant will be spent.** Details provided in section 3.11.
9. As per FD circular(s), appropriate amount should not be released after reaching the applicable limit of HOA. The system should not be allowed to release the allotment itself after reaching the limit.
10. **System should allow generation of various budget circulars.** Circular types to be divided into standard text and variable text. System should allow generation of standard text using data available in the system. SI shall design a template for the same in consultation with CTA and FD officials.

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3.1.1.3 Intimation to Departments & Activation of Budget Lines

1. The envisaged system should allow authorized users of Finance Department to activate the Budget Module for Departments to initiate the process of estimate preparation through a dedicated option available in their IFMIS Next Gen logins.
2. The envisaged system should be equipped with a Calendar plug-in to facilitate configuration of key dates for Budget finalization with tasks and target dates for completion of each task. Notifications to respective Departments should be triggered through the system itself.
3. The system should retrieve the utilization certificate, and final accounts from previous years through interface with VLC system of Accountant General or upload of file in the system.
4. The envisaged system should allow BCOs to map respective Budget Lines with corresponding DDOs. Only these DDOs will be able to view such Budget Lines.
5. The envisaged system should also have an option for relevant administrative department and BCO to activate the relevant Budget lines and define the time limit for DDOs to submit the receipt budget estimate and expenditure budget.
6. Finance Department should be able to approve any changes in BCO Codes and Departments.
7. Finance Department should be able to approve any changes in Budget line, Demand number, Scheme, etc.

3.1.2 Estimation

This functional block covers the processes of Capital and Revenue - Receipt & Expenditure - (including cash commitment) Budget Preparation, Public Account Heads, consolidation and finalization of the same. The estimation process of both Annual Budget and the Supplementary Budgets are covered in this section.

3.1.2.1 Budget Estimation

1. The system should also present line item/head-wise figures of accounts/ actuals in the last 3-5 years, RE of previous year and BE for current year, such that a historical reference is available while updating estimates of RE for current year and BE for next year. The forecasts for RE for current year should be auto-populated in the screen, which can be reviewed by Departments and updated. Moreover, the first year estimates of the medium term (three years) should be the reference for the annual estimates of the next year and the columns should be adjacent such that deviations from the medium term estimates are clearly visible.
2. The system should allow users to select predefined fields of budget lines and also allow entry of budgets by DDOs followed by consolidating at various levels in real time. The

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DDO from originating office should be given a provision to enter the requisite budget for the office. The budget requirements for various offices under a directorate / department would be consolidated to reach to the budget requirement of the directorate / department. If required, all the required budget of the directorates may be consolidated to reach to the budget requirement of the department.

3. The envisaged system should allow the Departments to model various Budget scenarios and analyse the outcome in accordance with the Departmental objectives and ceilings. Inputs from the risk framework like macro-economic indicators (like GSDP, inflation), past year's data, surrender amount etc. should be provided for analysis.
4. The envisaged system shall allow updating the budget estimates in the system. In case of exigency, as a backup, system should allow uploading the budget estimates prepared offline using the predefined templates provided by the Finance Department. At the time of file upload, the system should apply relevant validations to ensure that complete and accurate data is recorded in IFMIS. System should not allow entry of budget estimates for values greater than the ceilings defined by the Finance Department. This validation should be present in the system itself. This option should only be enabled upon prior approval of CTA or its nominated agencies.
5. In case there are additional budget demands beyond the ceiling fixed by the Finance Department, it should be captured through the same form clearly indicating that the demand is over and above the pre-defined ceilings. The rational for this increased demand should be clearly mentioned and the DS should have facility to accept / reject / modify the budget based on this demand. The input variables and formula to compute the final value should be devised accordingly in consultation with the Finance Department.
6. Revenue Receipts Estimation:
 - Departments like Commercial Tax, Excise, IGR, etc. already have functional IT systems and/or Budget Estimation tools with analytical capabilities for revenue forecasting and reporting. It is envisioned that IFMIS be integrated with these systems, wherever applicable to fetch the projections provided by Department users in their systems, in such a way that the Finance Department is able to estimate the likely available resources in the medium term to arrive at overall State Resource Envelope.
 - The envisaged system should allow generation of receipt estimates for each revenue head sliced across multiple time periods (months, quarters, half-year). These estimates should be pre-filled and presented to respective Revenue Department for finalization. The finance department may support other departments to finalize this estimation. The variance between these forecasts and the actual values should be presented in the envisaged system and also to the Finance Department at the time of review.
7. Capital Expenditure Estimation
 - New Projects: The envisaged system should automatically capture the project budget estimates from the Detailed Project Report (DPR) submitted by the

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Nodal Departments and the administrative approvals granted to them. These estimates should be used in the final estimation process.

- Existing Projects: The envisaged system shall also capture details of existing liabilities towards ongoing projects. Details of such liabilities should be captured from Project management or Works Management Systems of the State. Pending milestone payments should be fetched from these systems at the time of Budget estimation.
8. Debt, Loan and Inter State Transactions: The envisaged system should allow mandatory recording of values for Debt and Loan repayments based on the repayment schedule provided by the granting agency and/ or RBI. These values will be automatically obtained from the Debt, Investment & Guarantees module (through the clearance memos of RBI). Amortisation schedule or debt servicing schedule (monthly) for the entire life of each loan instrument/ source of borrowing should be generated based on minimal data entry. SI to note that interstate payments are made by AGMP. Central Accounts Section of RBI carries out all the credit/debit adjustments against the balances of the State required to be done for settling the claims of other States or Government of India.
9. Capital Receipts Estimation: System should capture relevant data (Recovery of Principal and Interest on loans given by GoMP) from the Debt and Investment Management module, based on the loan terms and conditions. This also includes dividends received by the State from corporations where GoMP has shareholding. Issuance of equity by GoMP should also be considered while estimation.
10. Revenue Expenditure Estimation: The envisaged system should compute the revenue expenditure estimates through the data already available in the system. For e.g. –
- Salaries: Number of employees
 - Pension Pay-outs: Number of employees retiring in the upcoming year / 2 years / 5 years, etc.
 - Dearness Allowance (DA) value as per the latest pay commission rates configured in the system
 - Telephone, electricity, vehicles, etc.
11. Public Accounts Estimates through integration with HRMS, Deposit module and AG system: Estimates for public account heads like GPF, DPF, GIS should be taken from HRMIS and AG system. Data related to recruitment, retiring officials etc. should be captured from the HRMS module itself. Any data regarding Deposit heads such as 8443, etc. to be fetched by Deposit module. Estimates WRT schemes operated by the GoMP like Ladli Lakshmi, Ladli Behna, etc. should be considered.
12. Off-Budget Entries: The envisaged system should provide an option to Departments to enter values for Grants from GoI and the funds to be received by the Departments as part of various schemes. The system should also interface with PFMS to auto-populate the data and map the funds against the relevant accounts heads of the State. The system

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should allow creation of Off-Budget scheme master against which the receipt amount should be automatically picked-up by the system as per State rules.

13. System should provide analytical tools to help the FD users define the parameters needed for computation of borrowing limits for the State, capturing the values for such parameters (e.g. debt/GSDP ratios) and in computation of overall borrowing limits, deficit calculation, financial ratios, for the State.

14. Outcome Budget

- It is envisioned to devise a comprehensive library of outcome indicators in alignment with the Sustainable Development Goals.
- All the outcomes linked to the respective Departments should be parameterized and system shall support in selecting these outcomes while preparing the outcome budget such that every scheme or project is aligned with the SDG targets of the State. The envisaged system shall support linkage of HoAs of budget with specific scheme codes of SDGs.
- It is envisioned that these indicators and targets be monitored at both Department and Finance Department level
- Provide departments a facility to define / add their own outcomes.

15. For ceilings and estimates, system shall support in conducting what if analysis to assess the impact of changes to key assumptions on the overall budget at state level, sector level, agency/department level, expenditure category level etc. System shall support in performing what if analysis based on changes in absolute numbers and in percentage in various parameters such as % of increment in salaries and wages or for individual components in salaries and wages, % of increment in various components in establishment expenditure or capital expenditure. Based on what if analysis, system shall support in assessing the impact on the overall budget ceiling or budget estimates.

3.1.2.2 Budget Consolidation & Review Process

1. The envisaged system should allow the BCO to finalize the Budget estimates, send them to Administrative Department to be reviewed and forwarded to the corresponding Budget section of the Finance Department.
2. The system should allow generation of a dashboard with drill downs available for each Budget Line. These dashboards shall be provided to authorized users - BCO, HoD and FD Users.
3. The dashboard should allow the Budget Section of FD to view past trends and difference in estimates provided vis-à-vis the actuals for past years (budget utilization)
4. The envisaged system should also allow FD to track the status of budget preparation across the state. The system should automatically issue appropriate reminders and alerts.

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5. The envisaged system should support in maintaining multiple versions of budget estimates specifically at the following levels – Estimates submitted to FD, Estimates after various reviews, Estimates submitted to the Legislative Assembly, Finalized version and others. Only finance department should be able to view these multiple versions of the budget. No other department should be able to view their own versions, other department's demands or the edits being made by the finance department.
 6. The process of estimate review and finalization should be driven through the system generated single screen budget for every Department. Various views and filters on Budget lines, screens, variance from forecasted values, outliers be provided in the single screen to allow filtration and edits and thus providing inputs during the budget discussion. Minutes of budget meeting for previous years should be available. This facility should only be available for the finance department and no other department.
 7. At every stage of review, the envisaged system should allow authorized users to enter the reviewed estimates, supporting documents like minutes of meeting and seek concurrence of members that were a part of the review committee digitally. Essentially, the system should allow generation of a comparative view of different versions of estimates and also record the key discussion points captured during review meeting of these estimates. These estimates should only be visible to the authorized users of the finance department.
 8. Outputs of budget spent in the previous year by the department should be made available as input for budget review and rationalization.
 9. A self-service dashboard should be enabled in the envisaged system to allow analysis of allocations, utilizations, status of outcome indicators etc. The outcome budget for all the departments (scheme-wise) to be shown as a public dashboard.
 10. Provision to update budget figures on the basis of inputs received from AG(A&E). Address budget classification anomaly on the basis of inputs received from AG(A&E), if any, during the Entry and Exit Conference conducted between AG and Finance Department. Provision to upload minutes of Entry Conference meeting along with any associated documents (e.g. review comments of AG on the budget, letter in this regard.)
- 3.1.2.3 Budget Volume Generation & Finalization (minus budget provisions in Budget, FS Memo Report generation, e-sign)
1. The system should allow export of finalized Budget estimates into the Budget Volumes to be presented in the Legislative Assembly. The format of the Budget volumes should be as per the prevailing guidelines and would allow customization as and when new notifications are issued. The budget volumes should also display scheme wise budget divided into Revenue and Capital expenditure. The system should allow generation of the budget volumes along with all the annexures also e-Budget.
 2. The envisaged system should support downloading of Budgetary estimates in multiple forms – PDF, excel, CSV etc.

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3. The envisaged system should allow transferring of the approved budget (appropriations) into General Ledger and AG's VLC system (through interface / upload of excel file of appropriations data obtained from IFMIS) to support in budget execution.
4. The envisaged system should automatically generate focused Budgets like Gender Budget, Child Budget, SC budget, ST budget, Agriculture etc. by consolidating the relevant budget lines and the estimates provided by the Departments. System should provide facility to select specific budget lines for generation of custom reports and focused budgets.
5. The changes after Budget Finalization will be catered with respect to a corrigendum.
6. The envisaged system should allow generation of templatized Budget Volumes including Volume 5: 'Details of allotment of government land on committed liability-guarantee and concessional rates'
7. The envisaged system should generate the monthly civil and annual finance accounts in a templatized format as agreed with AG (MP).

3.1.3 Allocation & Management

1. The envisaged system should provide the option to identify and categorize a specific HoA as 'Global' and allow spending from the same accordingly. Global HoA would mean that the allotment would be at the BCO level after necessary approvals and DDOs would be allowed to draw funds as per the requirement from the allocation available with the BCOs. There would be no need for distribution under the specified Heads/Units of expenditure below the level of the BCO. The SI shall finalize this process in consultation with CTA or its nominated agencies.
2. The envisaged system should allow specifying monthly/ quarterly expenditure limit, special expenditure limit for capital expenditure and drawal permission above a threshold
3. The envisaged system should present suggestions on periodic allocations for BCOs. BCOs should get suggestions on periodic allocations for DDOs. DDOs based on past trends and utilization history, re-appropriation requests, surrenders etc. Alternatively, the system should also allow allocations to be updated through upload of files in pre-defined templates. The envisaged system should be able to validate and read this file to update the allocations.
4. The system should support in auto-distribution of the budget for Budget heads for which estimates are prepared DDO-wise, based on the submitted estimates. The system should support in adjusting the distribution based on the variance between the submitted and approved estimates, DDO-wise.
5. The envisaged system should allow BCO to BCO transfer especially in case of transfer of budget to works department for specific projects/ schemes.

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6. The envisaged system should allow specifying budgetary limits and validity of such limits by authorized users. The system should allow generation of allocation orders from the system itself. The facility of providing relaxation in the budgetary limits should be facilitated through the system by allowing online generation of a templated proposal by the concerned Department. The proposal can then be sent to the Finance Department through the system itself. The SI shall finalize this template in consultation with CTA.
7. The envisaged system should allow processes like re-appropriation and re-distribution to be driven through the system itself. The re-appropriation/ re-distribution proposal should be generated through the system, examined by Competent Authorities within the system, approved and the revised values reflected against the relevant budget lines. Relevant controls and workflows for re-appropriation and re-distribution should be configured in the system as per the relevant rules of the state. In case of re-appropriation, the amounts and respective heads should be updated in real time as and when the re-appropriation proposal is approved by the Competent Authority. AG should have view access for the approved re-appropriation/ re-distribution documents based on the workflow finalized by CTA.
8. The envisaged system should allow preparation and submission of Contingency Fund withdrawal proposals through the system. Validations with respect to Contingency Fund recoupment and other relevant rules should be configured in the system.
9. The envisaged system should provide periodic alerts or notifications with respect to pending recoupment of contingency fund. For all supplementary budget, the status of contingency fund should be visible. DS budget should get the supplementary budget details for all departments.
10. The system should generate a pre-filled surrender request to be verified and submitted by DDOs & BCOs back to the Finance Department. There should be auto-surrender facility, where a department's budget would be surrendered by 15 January every year. The system should allow the DDOs & BCOs to provide supporting documentation with respect to the surrender amount and the same shall be visible to the Finance Department. The system should allow pull back of budget from DDO by the BCO as per the prevailing rules. This should be allowed based on the consent of the DDO. Intimation will be provided to the DDO in case of pull back of the budget to seek their consent.

3.1.4 Control

1. A simplified interface for configuring various rules like Department wise ceilings, quarterly allocations, special expenditure limits for capital expenditure etc. should be devised in the envisaged system to allow configuration of rules through user interface without having to make changes to the code.
2. Dashboard – RBI capital expenditure bills, revenue side bills, ad-hoc reports – customizable. Cash flow impacting values should be shown. Cash flow report for next 7 days with flags. Based on scheme number – All scheme related details should be shown to DS. Statement 1, 2, 3 & top sheet to be on dashboard.

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3. The system shall allow Department to submit proposals to FD for various cases for approval. This will include cases like putting up proposal for relaxation on Monthly/Quarterly Limits. The system should have an approval workflow configured for the same. This workflow can be edited by authorized users. Upon approval of such proposals, the relevant fields or rules should be updated.
4. A self-service dashboard should be enabled in the envisaged system to allow analysis of allocations, utilizations, outcome indicators etc.
5. The system should be able to generate historical reports comparing the budget estimates sent to the FD, against the values for last 5 years for each department. The envisaged system should provide a report which displays the original budget demand, supplementary demand, re-appropriation cases and the total/net demand against the relevant budget lines.
6. The system should allow authorized users to generate custom reports by selection of parameters through the system. Example of such reports can be – status of budget distribution. DDO wise allocation, BCO/DDO wise expenditure, budget balance, re-appropriation instances, list of work IDs, monthly expenditure limit fixed by FD vs actual incurred expenditure, expenditure by the recipient BCO in case of BCO-to-BCO transfer, scheme wise reports, segment wise BCO / DDO expenditure account etc. The envisaged system should also allow generation a compiled reports at multiple levels like re-appropriation report for all BCOs related to the same Demand number, surrender of Budget basis demand, financial year, BCO details etc.
7. The envisaged system should show the allotted and distributed budget amount appropriately in the system.
8. The system should have provision to share main budget, supplementary budget, and vote on account budget details in pre-defined format to BCO and AG office.
9. The system should allow sharing of accounts of various agencies associated with the departments, with AG.
10. The system should provide a functionality to maintain minimum balances in the budget lines based on expected expenses. System should allow configuration of rules for this purpose. Additionally, to cater to repayment of amounts for EAPs, exchange rates fluctuations may be recorded and accordingly decision of cash to be retained may be taken.
11. System should provide a facility to partially / fully block the budget head, if required.

3.2 Modified HRMS / Fin-HRMS

The Human Resources Management System (HRMS) enables various processes for Employee lifecycle management. There is already a separate e-HRMIS system being developed by General Administration Department (GAD) of GoMP. To avoid scope overlap,

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IFMIS Next Gen will only include select HRMS modules as described in this section. The HRMS functionalities for all state employees including the FD employees will be accessible from the e-HRMIS system of GAD or any other mechanism/process suggested by GAD. HRMS functionalities other than the ones listed in this section are not under the scope of IFMIS Next Gen.



Figure 6: HRMS Module

As demonstrated in the graphic above, HRMS will have following functionalities –

- Pay Fixation as per rules
- Payroll Processing based on the information and employee details received from e-HRMIS or any other mechanism notified by GAD
- Generation and Maintenance of Payslip and Salary Database
- Generation of payment slip for reimbursements, arrears etc.
- Arrear Calculation & Verification
- PF and Insurance Management including GPF/DPF Part and Final Withdrawal
- Processing, Payments and Accounting of loans and advances
- Processing, Payments and Accounting of allowance and deductions
- Pension Processing as described in section 3.3.
- The role of the Super Admin should also include:
 - o Reversal of processes.
 - o Access to detailed ad-hoc report of all system changes

Employee profile, service records, cadre, posts and office details and employee hierarchy will be maintained in e-HRMIS. Data will be exchanged through APIs. The exchange would be two-way so that data remains consistent in both systems.

- As per the GAD order dated 21.11.2024, provisions should be clearly specified for the integration and data transfer between Next Gen IFMIS and E-HRMS.

Additionally, modules like Performance Management shall be handled by NIC's SPARROW application or e-office or any other mechanism notified by GAD. Allotment of official quarters to Employees and inputs related to relevant deductions will be managed through e-HRMIS or

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the respective Department application and the data regarding date of possession and hand over will be shared with IFMIS through integrations. This would also cover generation of No - dues certificate electronically.

In IFMIS Next Gen, the salary structure of each employee will be populated from service matter records to be maintained in e-HRMIS or any other mechanism notified by GAD. For the employees who have any allowance and deduction that need to be updated, DDOs will be provided a cut-off date by which they would be required to update the information in e-HRMIS and this information will be shared with IFMIS Next Gen for payment processing. A cut-off date will be defined between e-HRMIS and IFMIS for capturing all such details required for payroll processing. After the cut-off date no changes will be allowed in the payroll data for the month. Any allowance and deduction will be processed in next month's payroll as per relevant rules.

The functionalities envisaged in IFMIS Next Gen HRMS are defined as follows:

- Pay Fixation for managing and capturing annual pay increments, special increments, and pay fixation in case of promotion, higher pay grade or any other notification released by the Government
- Payroll Processing: Generation of salary bills like regular pay bill, all types of arrear bills, NPS arrears, special bill, supplementary bill, leave salary bill, bonus bill and subsistence grant allowance as per employee categories will be handled in IFMIS Next Gen. The inputs for these bills should be obtained from e-HRMIS. If there is a service break of less than six months in the employee's service, Date of Next Increment (DNI) must not be changed in accordance with relevant rules. Data entry for service break should be done in e-HRMIS and shared with IFMIS Next Gen through integrations. In such a case, the salary increase should not be obstructed as per prevalent rules. If the leave without pay or absence period is more than six months, the pay increment should not be processed for the employee or as per state rules. All such rules and amendments should be finalized in consultation with CTA and configured in the system. The system will also have the capability to generate state-wide payment bill by Pay and Accounts Office (PAO), as and when notified by GoMP. Till such time, the pay bills (Normal salary and grant salary bill etc) shall continue to be shared with respective treasuries. The PAO will create a state-wide payroll bill and process it for the salary payments. The implementation of this functionality will be contingent on being notified by the State. However, the system should also have a provision to generate a single salary bill for the state as and when notified.
- Allowance and Deduction Computation: e-HRMIS should facilitate modification of applicable salary components of allowance and deduction with a maximum ceiling in each allowance as per relevant rules. The inputs for modification should be obtained from e-HRMIS. The process of initiation and approval of such requests should be managed in e-HRMIS. The impact of approved allowance/ deductions in Employee's payroll will be shared with IFMIS Next Gen for salary processing.
- Form 16 issuance and statutory deductions

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- Salary Slip access by Employees and stop salary actions

AG office issues the pay slips to the state Governor, Chief Minister, Chief Justice and Justices of MP High court, Election commissioners, Lokayukt, Information commissioners, Chairman and members of MPPSC, Chairmen and members of Arbitrational Tribunal, Advocate General and Government Advocates etc. Further, AG office maintains the Leave balance account of Chief justice and Justices of MP High Court and issues Leave Encashment Authorities to MP High court registries. Therefore, this system should be designed in a way that AG users can access the requisite documents to allow issuance of pay slips and entitlements

- Processing of arrears
- Leave encashment
- Payment and accounting of loans and advances
- Processing of reimbursements
- PF management
- Exit management
- The system should have inbuilt provisions to comply with CTA-level circulars related to employee data changes, such as those for Date of Birth (DOB), Date of Joining (DOJ), and Bank Account changes
- Provisions should be added for generating various ad-hoc reports at the BCO/HOD/Admin Department level.
- The system should explicitly include functionality for analyzing employee data efficiently.
- It should be clearly defined where and at what level the employee code will be created.
- The finalized format of the complete employee profile should specify which details will be verified from which sources.

3.2.1 Pay Fixation

This module will process capturing annual pay increments, special increments, and pay fixation in case of promotion, higher pay grade or any other notification released by the Government. Pay fixation functionality should be enabled for all cadres. The sub-processes to be enabled in IFMIS Next Gen are listed below –

1. Processing of Pay increments
 - a. System will be integrated with e-HRMIS or any other mechanism notified by GAD to capture employee's grade, pay scale/ pay band / grade pay details and key data points related to their increment

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- b. The policies for salary revisions/ increments, consequent to pay increment notifications should be maintained in IFMIS Next Gen and should be triggered for pay fixation process in related module. Changes, if any to the system generated values should be accompanied with a remark clarifying the reason for such change. IFMIS Next Gen should allow authorized users to configure these policies and rules through the rule interface.
- c. The changes should then be available for payroll processing.

2. Pay Fixation

- a. The system should provide the facility to allow pay fixation for all types of employees. The pay fixation requests should be managed through IFMIS Next Gen; however, the service books should be made available in IFMIS Next Gen through e-HRMIS integration. The pay-commissions and its scale should be interlinked, with each other.
- b. Fixation may be for cases involving promotion or kramonnnati, time-scale, selection grade, upgradation, demotion, reduction to lower pay-scale, absorption, appointment, revision of pay-scale, probation, notional pay-fixation, All India Services, Judiciary services, pay-fixation of stipend employees (joined after 12 December 2019 or as per rules) etc.
- c. The service books of employees should be available with the JD office through e-HRMIS & IFMIS Next Gen integration.
- d. The system should also allow the user to search for an employee for whom pay is to be fixed as per new pay commission rules based on following indicative parameters - cadre, designation, employee name, employee code, department, office. These parameters should be finalized by the SI in consultation with CTA.
- e. IFMIS Next Gen should allow configuration of all the pay fixation rules as applicable through the rule interface.
- f. System will select the new pay scale applicable to the employee by entering a date from which it will be effective. The updates to Employees' salary should be automatically updated and presented to authorized users for confirmation based on the rules configured and applied.
- g. As an exception, the system will also have a provision to input/update user computed amount that would be fixed as Employee's pay in special circumstances and forward to the employee for confirmation or accordingly as per state rules. Such confirmation requests should be routed through e-HRMIS integration.
- h. On receipt of employee's confirmation, the system will allow the user to forward the case for the verification and approval of the Competent Authority. The Competent Authority needs to put their e-signature post-approval,

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- i. On approval, the intimation will be sent to the employee through e-HRMIS integration. After the approval of pay fixation, the case will be presented to the pay fixation channel of JD office and after their due verification and approval, the payroll should be updated with the data of the revised pay structure from the effective date. In case of non-approval / rejection, the case should be rejected in the system. The office should then file a new case. The JD needs to put their e-signature post-approval / non-approval.
- j. The pay fixation process should be managed through a workflow and allocation of cases to officials within the JD office should be based on the existing workloads or any other relevant parameters to avoid any backlogs. The envisaged system should also track pendency at each level and trigger notifications and escalations accordingly.
- k. Additionally, the system should allow configuration of pay fixation rules in the system and computation of the salary components based on these rules. The computation should be presented as draft to the JD, which can be reviewed and finalized.
- l. The system should also allow last pay calculation in case of transfers. The system should also generate Last pay certificate
- m. The pay fixation details will be shared with e-HRMIS for necessary updates to the employee database/ service books.
- n. Pay fixation sheets will be digitally signed by authorized users.
- o. A special screen should be allowed to handle court cases and special cases.

3.2.2 Allowance and Deduction Computation

- 1. System will allow payroll user in IFMIS Next Gen to verify if the payroll data has been updated for the current month.
- 2. If the user had made changes to allowance and deductions, it should be reflected in allowance and deductions screen of IFMIS Next Gen through e-HRMIS integration. It should also be confirmed that all the allowances are mapped with the concerned pay-commissions.
- 3. Changes to allowance and deduction data like Income Tax, Vehicle charges, CM Relief fund etc. should be allowed in IFMIS Next Gen.. IFMIS Next Gen shall only generate the pay bill and process the employee salary, payments, arrears and recoveries (if any) based on the updated data.
- 4. System will facilitate automatic updation in GPF/DPF/NPS/UPS account / balance based on the disbursements made. Integration with AG and CRA must be established for maintenance of GPF and NPS passbooks. Calculations regarding these deductions will be maintained by the system. The payroll user must be able to see the entire historical

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data of GPF/DPF/NPS account through system generated passbooks. Employees can access the passbook through IFMIS Next Gen or e-HRMIS.

5. Any correction / updation having retrospective effect on salary should be handled in IFMIS Next Gen.
6. Request for disbursement of allowances such as HRA, conveyance allowance, etc. shall be obtained from e-HRMIS. IFMIS Next Gen shall capture approval by designated authority which will be reflected in allowance and deductions accordingly pay-bill will be generated.

3.2.3 Payroll Processing

1. The envisaged system should allow authorized payroll user (DDO or otherwise) to select the type of bill to be processed
2. System will allow authorized payroll user to select appropriate budget line for which payroll processing needs to be done
3. System will allow payroll user to select employee category and class for which payroll bill needs to be processed.
4. System will auto-populate list of employees for the selected category and class under the purview of the payroll user
5. System will fetch and display all the salary components along with allowance and deductions to the payroll user for each employee in the paybill. Allowances components like washing allowance, travel allowance, other such allowance should be auto-populated by the system based on prevailing rules of GoMP.
6. System should auto-generate the paybill and should allow payroll user to verify, make any changes and submit for approval
7. System will process the payroll bill and submit to expenditure module once approval is received.
8. After generating the paybill, the system will provide the functionality to display the bill.
9. The system should also allow processing of stipends as per the instructions and records received from e-HRMIS.
10. The envisaged system should have validations to check and ensure, that the stipend gets disbursed from the specific date from which the stipend is due. Facility to generate a report for undrawn stipend should also be provided.
11. Any edits/amendments to the stipend should be handled through e-HRMIS and the relevant records to be shared to IFMIS Next Gen.

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12. System will generate the payslip automatically on the payroll archived and payment data. The payslips should be pushed to e-HRMIS and e-HRMIS should allow view and download of payslips by Employees.
13. System should have the facility to revise the pay /pay scale in the automatic salary of the employees.
14. System should also display the salaries of the previous months and the pending bills of the employees which were not cleared due to some reason.
15. The system should automatically update payroll database when basic pay / pay data changes due to any reason for e.g., promotion, pay commission, etc. through pay fixation process as described in section 3.2.1.
16. System will also allow the user to generate the old arrears and bills. The system should generate message / flag, in case the duplicate arrears are being generated (not to be generated for same month and year combined).
17. System will reflect payroll adjustments in correct pay period.
18. System will have a full and final settlement process in place and should be able to generate the full and final settlement amount at the time of Employee exit as per state rules.
19. System will generate arrear calculation for a defined period when salary enhancements (salary & allowances) are revised in retrospective. Salary enhancement requests and data should be obtained from e-HRMIS.
20. System should calculate deductions on arrear amount based on prevailing rules.
21. In case of overpayment, the system should generate a recovery order as per the prevailing state rules. In case of recovery, system will provide the following options –
 - To deduct the amount of recovery at once from the salary
 - To deduct a fixed instalment amount from the salary each month for the decided period
 - Deposit full/remaining amount through e-challan
22. Repayment of recovery (with or without interest) will be facilitated by the system, in case of order by Competent Authority.
23. The recovery made either, through paybill or challan will be recorded and captured in arrear sheet by the system.
24. Salary slips of employees receiving salary and allowances through release of stop salary payment and living subsistence allowance should be generated from IFMIS Next Gen.
25. Facility to convert categories (NPS to GPF / DPF/UPS) in bulk should be provided in the system.

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26. The envisaged system should also have facility to allow the user to opt for self-approval of pay bills based on prevailing rules of the state.
27. The system should allow repayment of recovery from the same budget line against which the recovery was done or from the budget lines authorised by the Competent Authority in case the same budget lines are no more available due to changes in the Budget Books, Department merger.
28. The system should allow auto-generation of the report for exaggerate increase in pay component as compared to average of previous month's salary.
29. Tagging of Recovery against an employee who has received excess payment or recovery ordered by a Competent Authority should be provided in the system to start the recoveries from the salary of current month. These recoveries shall be a part of e-service book of employee available in e-HRMIS. If the amount deposited through challan or recovery has been made through deductions in Arrear/Leave encashment/Gratuity/Other claims of the employee/Pension, then system will fetch these details to update the e-Service Book of the employee. The recoveries will be governed by the rule engine provided in the system as per the rules mentioned in the MPTC 2020 or enabled by prevailing rules or as per orders of the Finance Department.

3.2.4 Form 16 and Income Tax Deductions

Intimation for self-assessment must be sent to employees whose annual salary falls under the taxable range as per the prevailing income tax rules. The functionality for self-assessment shall be enabled in e-HRMIS and the information related to deductions shall be shared with IFMIS Next Gen for payroll processing.

1. The functionality to enable Employees to conduct self-assessment to gauge tax liabilities should be enabled in e-HRMIS. This data will be shared with IFMIS Next Gen for computation of necessary deductions, generation of pay bills and form 16. System should calculate total income tax payable, based on gross pay and quarterly tax liability and accordingly the IT deduction should be planned by the system for an employee, as per the prevailing rules.
2. IFMIS Next Gen will share the records related to deductions and form 16 with e-HRMIS, which will allow access and download to Employees. The envisaged system should also provide a facility to generate Form 24Q and other statutory data / reports for Employer/ Deductor so as the requirements (as per IT act /CBDT rules) can be fulfilled.

3.2.5 Arrear Calculation & Verification

This functionality will be used to calculate arrear amount and submit arrear sheet. SI to design a simplified arrear screen with a systematic adjustment and recovery facility. After arrear sheet submission, employee's arrear bills will be generated. For arrear calculation, historical pay data is also required. This data will have to be integrated from IFMIS. Such migration will be

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done RFP clause 2.2.5.4. The arrear sheet will be generated in IFMIS Next Gen for processing of arrears. The arrears amongst others can be of following types –

- Arrears before January 2006
- Arrear after Jan-2006 till Dec-2015
- Arrear instalments of 7th and further pay commissions
- Arrear after 01-07-2017 including DA arrear
- Arrear for Non-Regular and Deputation category employees from 01-01-2016.
- NPS arrear bills should be prepared from effective date along with calculation of interest if delay happened on the part of Government officials.
- Arrears related to contribution of GPF, DPF, GIS, FBF, NPS, etc. (with interest)
- Arrear for All India Services employees from 01-07-2017

The arrear sheet will be generated by the DDO or the authorized users in e-HRMIS. Upon confirmation of the same, the arrear sheet will be pushed to IFMIS Next Gen for generation of bills and payments to the Employee.

3.2.6 Lifetime Arrear Bill

1. For arrear calculation, historical pay data is also required. This data will have to be integrated from IFMIS. Such migration will be done RFP clause 2.2.5.4.
2. System should have functionality to select employee, bill type, financial year and month for which bill needs to be generated.
3. System should provide functionality to enter all the required details and submit bill to Bill Management System
4. Details such as employee category/ class/ nominee details/ bank details of the nominee etc. shall be obtained through e-HRMIS integration.
5. In case of death of an employee after retirement, the amount should be paid to the nominees as per the mentioned sequence.

3.2.7 Salary Slip Access

1. IFMIS Next Gen should provide functionality to payroll DDO to search old paybills with employee name, employee code, year, month and other relevant parameters.
2. IFMIS Next Gen should provide functionality for selecting old salary paybill, budget head, month, year and employee category for generating the bill
3. IFMIS Next Gen should provide functionality to payroll DDO to check bill details and submit to Bill Management System module. After successful payment, the confirmation and payment slip/ salary slip will be shared with e-HRMIS through integrations.

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4. Provision will be provided for retired employees and heir to demised employees to view pay related data.
5. Pay related data will be tagged with the employee code, so that change in DDO due to transfer/selection does not affect the availability of pay slips and yearly statement of salaries received.
6. IFMIS Next Gen should provide functionality to access annual statement by the user
7. The system should be able to generate pay slips and annual salary statement based on the legacy data

3.2.8 Stop Salary

1. e-HRMIS will allow payroll DDO to select employee for stop salary and upload stop salary order. The instruction will be shared with IFMIS Next Gen for salary processing.
2. e-HRMIS should have functionality to remove stop salary of employee, upload Stop salary payment order. The instruction will be shared with IFMIS Next Gen for salary processing.
3. The stop salary orders and relevant details will be shared with IFMIS Next Gen to generate or remove stop salary payment bill and submit it to Bill Management System module.
4. IFMIS Next Gen should also have functionality to generate list of employees for whom stop salary order have been generated. System should display the uploaded stop salary order, start date, end date, stop salary payment order, stop salary payment bill number etc. in the list and publish it in a dashboard

3.2.9 Leave Encashment

1. The functionality for employees to select the number of earned leaves from available earned leaves for encashment and submit for approval shall be provided in e-HRMIS or any other mechanism as notified by GAD.
2. Once approved in e-HRMIS, IFMIS Next Gen will capture the request through integration, prepare the bill for payment and update the database in e-HRMIS
3. Upon successful payment, the confirmation and payment slip shall be shared with e-HRMIS and shall be the part of Service Records to omit the chance of double payments. If there is any case of arrear/recovery due to change in last pay or leave record, then same should be captured in Service Record after payment/recovery of the amount.

3.2.10 Loans and Advances

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Employees are eligible for availing various types of loans and advances based on their salary. They can log in to the E-HRMIS portal, where a functionality link will be provided for submitting applications to avail these loans and advances. All the loan processing shall be done on IFMIS Next Gen system. Additionally, provision should be included requiring employees to submit requests for facilities with financial implications (e.g., TA, Medical, GPF/DPF, NPS withdrawal) through IFMIS Next Gen portal. The loans and advances amongst other can be of following types –

Advances

- i. Medical Advance
- ii. Transfer Travel Advance
- iii. Tour & Travel Advance
- iv. LTC Advance
- v. Grain Advance
- vi. Festival Advance
- vii. Vehicle Advance
- viii. House Advance
- ix. Computer Advance
- x. Children Education Allowance
- xi. Solar Cooker Allowance
- xii. Pay Advance
- xiii. Other Advances as per State rules

The following process will be used for processing loans and advances –

1. Employee shall redirect from E-HRMIS portal to IFMIS Next Gen to submit their requests.
2. System shall capture a schedule for the amount of advance and the number of instalments.
3. Details of employees seeking extension of selected advances shall be captured in IFMIS Next Gen portal.
4. The system should allow specification of loan moratorium by authorized users after obtaining necessary sanctions.
5. The envisaged system should have check figure for number of advances drawn and for not permitting advances until earlier ones repaid.
6. Once the bill is approved and submitted to the treasury for payment, the financial data will be shared with the e-HRMIS portal

3.2.11 Reimbursements

E-HRMIS shall provide a provision for employees to be redirected to the IFMIS Next Gen portal to request reimbursements for expenditures incurred under specific heads. All reimbursement processing shall be handled through the IFMIS Next Gen system. The types

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of reimbursements include medical, leave travel concession, travel, transfer travel, and others. The following process will be followed for processing reimbursements

1. IFMIS Next Gen shall capture reimbursement requests from employees after approval by the designated authority, facilitating the preparation of the bill for claim payment within IFMIS Next Gen.
2. System will create a challan in case of excess advance/payment and prompt the user for payment which will be processed through receipts module.
3. System will process the claim payment through expenditure module.
4. The envisaged system shall also allow generation of reimbursement bills for family members of the Employees as per their eligibility.
5. The facility for Employees to request endorsement from other office for submission of travel bill in case the Employee has undertaken travel on their request shall be available in IFMIS Next Gen ..
6. IFMIS Next Gen should generate a reimbursement slip once the payment has been successfully made.
7. IFMIS Next Gen should provide employee-wise reimbursement history through integration with e-HRMIS for various types of reimbursement payments with necessary categorization, finalized with CTA.
8. Provisions for integrating the Health Department portal with IFMIS Next Gen shall be implemented to ensure seamless data transfer and processing.

3.2.12 GPF/DPF/NPS/UPS/GIS Management

System shall have the functionality for managing Provident fund for state employees subscription modification, monthly deductions and withdrawals. The system should also allow generation of passbook with accurate balance which can be accessed and downloaded by employees. The system should be able to integrate with CRA to consume data. Functionality for NPS and EPF / CPF management should also be provided.

3.2.12.1 Subscription Modification

1. The functionality for employees to modify their subscription amount and processing approvals shall be provided in IFMIS Next Gen.
2. PF eligibility masters shall be maintained in IFMIS Next Gen as per relevant rules in IFMIS Next Gen.
3. After a process is completed, data shall be updated in payroll deduction master in IFMIS Next Gen as well as same shall be shared with e-HRMIS.

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4. The system should have a provision to display the amount of contribution deducted as GPF/DPF/NPS/GIS/UPS etc. from the salary of any Employee in IFMIS Next Gen.
5. IFMIS Next Gen shall make the relevant reports available to AG through their dedicated login in IFMIS Next Gen and also through integrations
6. Integration with AG for reconciliation of accounts shall be enabled.
7. GPF/DPF/NPS/UPS balance should be auto updated once the salary is successfully processed.
8. IFMIS Next Gen shall maintain account wise statement of transactions for GPF and will perform necessary reconciliation with the accounts maintained by AG. At regular intervals, the system will generate exception reports highlighting the discrepancies between IFMIS Next Gen statement of transactions and the ledger maintained at AG.

3.2.12.2 Advance

1. IFMIS Next Gen shall provide employee the functionality to apply for PF Advance and submit for approval.
2. The request once received in IFMIS Next Gen through integrations will be processed as per eligibility rules and forwarded for payments or rejected. Relevant rules for PS advances should be maintained in IFMIS Next Gen. System shall provide functionality to approver to review subscription, advance request etc. of the employee and approve the request.
3. System shall capture the approval and submit bill for claim processing in expenditure module
4. For employees not able to apply through the system, due to any reason, an option to delegate should be provided to authorized users as per relevant rules. This delegation or on-behalf option should have a proper approvals which shall be captured in the system.
5. System will have provision of creation of repayment schedule, auto deduction from salary and updation of accounts simultaneously.

3.2.12.3 Calculation of PF Interest and Final PF Amount

1. The interest master(GIS,NPS,UPS,GPF and DPF) will be created and maintained in IFMIS Next Gen.
2. The calculations will be done by the system on quarterly / half-yearly / annual basis as per relevant rules.
3. Calculations will be done on total deposit minus withdrawals during the calculation period
4. Interest calculation on non-drawl / lapse of final payment authority of PF should be enabled.

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3.2.12.4 Part and Final Withdrawal of GPF/DPF/NPS/UPS

1. IFMIS Next Gen System shall provide web service that employee shall redirect from e-HRMIS portal.
2. System shall provide an option to Employees to apply for PF advance withdrawal and submit for approval.
3. IFMIS Next Gen should maintain the balance of GPF/DPF/NPS/UPS and compute the eligible amount as per rules.
4. Based on the withdrawal requested by the Employee IFMIS Next Gen should ingest the request and prepare the repayment schedule as per rules and forward to verification and approval. System should not entertain the request in case of any ongoing advance repayment as per GPF/DPF/NPS/UPS rules.
5. On approval, the request should be forwarded for bill creation and payments. After the payment verification and approval, the GPF/DPF balance should be updated.
6. An upload facility should be provided to Treasury for DDOs and AGMP (for GPF final payment sanctioning authority)
7. In case of any objection at sanctioning authority level, the application may be objected, intimation will be sent to the applicant and applicant may re-apply addressing the objections raised.
8. Application for part/final withdrawal will be same as the advance withdrawal process outlined above. System should check the balance and eligibility against the applied amount and the sanctioned amount as per rules. In this case no repayment schedule will be required.
9. System shall provide functionality for employees to request for updating their missing credits & balances and submit for approval in e-HRMIS. The missing credits / balance update request shall be initiated by the employee in e-HRMIS. It will be forwarded to DDO who will further forward it to TO for verification and forwarding to AG Office for final verification and approval. The approval process from TO to AG should be enabled in IFMIS Next Gen
10. System shall also allow approving authority to authorize final withdrawal on behalf of employees in case of retirement, termination and death.
11. System will provide a functionality to approvers to review subscription, advance requests etc. of the employee and approve the request. If the request is rejected by the approving authority, the reason should be captured and the system should allow the employee to reapply as per the relevant rules. The objections raised by the approving authority should be shared with the Employee through e-HRMIS integration

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12. On cancellation / rejection of the request, the eligible amount must also be updated as per relevant rules.
13. System shall provide workflow to Accountant General office for seeking necessary approvals from designated authorities as well as provide functionality to upload approval if it is received offline. The system should enable a standard template for sanction order for the GPF withdrawal as per MPTC rules. The Sanction order should be generated from the system itself.
14. The system should provide facility to generate Final Payment Authority Letter by AG Office. Thereafter, the authority letter should be reflected at the time of bill creation by DDO.
15. AG users will be able to access the functionality through a dedicated IFMIS login provided for this purpose
16. The expenditure module should allow generating the GPF/ DPF/NPS/UPS withdrawal bill against the Sanction order generated by AGMP/Competent Authority in IFMIS. The system should also generate reports related to bill generation against Sanction orders issued by AGMP.
17. The system should automatically update GPF/ DPF/NPS/UPSbalance and at the end of every year (or at a pre-defined frequency) generate a report summarizing deductions and the interest accrued. The GPF/ DPF/NPS/UPS account number should be displayed and be mapped to the Employee ID and mobile number, as well and shall be the part of their service record in e-HRMIS
18. The monthly GPF deductions made from the salary bills of the employees which are generated online will be updated in the GPF account of the employee and the annual GPF slip will be generated as per AGMP.
19. The balance and statements for these accounts shall be displayed to Employees in e-HRMIS through data shared by IFMIS Next Gen.
20. The system should also allow part or final withdrawal of NPS by integrating with CRA. These requests shall be generated and processed in IFMIS Next Gen against relevant rules.
21. The scenario, in which employee is out of system and their deductions related to GPF/DPF/NPS/GIS/UPS are not being captured in the system, an option to input the same should be provided as an exception. This process should be enabled in consultation with CTA.

3.2.12.5 PF Account Transfer

System shall provide a functionality to employee for submitting request for conversion of Departmental Provident Fund to General Provident Fund, NPS to GPF/DPF and NPS to UPS

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conversion, temporary advance to part-final, and Interstate transfer. Such requests will be initiated in IFMIS Next Gen.

1. System should provide employee option to download GPF/DPF/NPS/UPS statement from IFMIS Next Gen portal.
2. System shall provide employee functionality to raise a request for PF account transfer and submit for approval.
3. System shall provide functionality to designated authority for reviewing transfer request and providing approval.
4. System shall generate necessary orders and documentation on receiving approval and forward it to competent authority
5. System shall provide functionality to competent authority to forward PF account transfer request to Accountant General
6. System shall provide workflow to Accountant General office for examining the request and uploading any supporting documents. Upon approval by AG, new GPF account number should be captured by IFMIS Next Gen
7. System shall capture the approval from Accountant General and make necessary modifications to payroll and service records of the employee. The service record updates should then be shared with e-HRMIS.
8. NPS deductions as per as per relevant Gazette Notification and balances should be available in IFMIS Next Gen and shared with e-HRMIS through integrations for the Employee to access and download the same.
9. NPS arrears bills should be prepared form effective date along with calculation of interest if delay happened on the part of Government officials.
10. After successful conversion of PF account, the system should transfer the balance and deactivate the old account accordingly.
10. NPS contribution, Challan received through cyber treasury should be synced automatically with employee contribution master and same should be shared with NSDL

3.2.12.6 NPS Withdrawal

1. The envisaged system shall capture NPS withdrawal requests through integrations between e-HRMIS and IFMIS Next Gen. The e-HRMIS system shall allow employees to be redirected to the IFMIS portal for NPS-related requests. All financial processes shall be carried out in the IFMIS Next Gen portal, with data shared with e-HRMIS through the integration process. After successful processing of the NPS withdrawal request and payment to the Employee, IFMIS Next Gen should generate a payment slip or confirmation and share with e-HRMIS so that the Employee can access the same.

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2. The withdrawal request should be processed through CRA integration.
3. The envisaged IFMIS Next Gen should maintain records for such withdrawal requests.

3.2.13 Exit Management

System shall provide functionality to capture details related to employee resignation or retirement through e-HRMIS integration. The profile will then be available in the pension module in IFMIS Next Gen for further processing as per section 3.3.

The system should be enabled with a clear and detailed process flow for different types of exits: Employee-initiated exits: Voluntary Retirement Scheme (VRS) and Resignation.

- Organization-initiated exits: Compulsory Retirement, Termination, or Dismissal (usually following a Departmental Enquiry or court case). In such cases, details should be fetched from E-HRMS, and the impact on exit should be appropriately reflected.
- Normal exits: Superannuation and Death, which are generally handled by the office.

The process flow for triggering such exits and managing post-exit claims and payments should be enabled in the system.

It will also support Ex-Gratia and Grant payments during the exit process. It may be noted that the process of compulsory retirement and termination / dismissal are to be handled by individual departments (other than FD) and the data related to processing of pension, payroll and pay fixation should be shared with IFMIS Next Gen for further processing.

Compulsory Retirement

1. The details related to compulsory retirement, termination or dismissal of Employees shall be obtained through e-HRMIS integration for further processing.

Superannuation

1. E-HRMIS System should display a list of employees who will retire after 2 years from current month
2. These records will be made available in IFMIS Next Gen for further processing.
3. System should calculate and display the amount of anticipatory pension and anticipatory gratuity along with facility for DDO to modify such amount and submit for approval
4. System should provide functionality for Appointing Authority or Head of Office to review employee details and approve the request
5. System should generate necessary orders and send intimation to Pension module, Accountant General and Head of Department.
6. The details of pension processing are provided in section 3.3.

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Ex-Gratia/ Grant Payment (Anukampa Anudaan / Vetan)

1. System shall provide functionality to user to select deceased employees for whom ex-gratia/grant payment needs to be done. This request will be initiated in e-HRMIS and shared with IFMIS Next Gen for further processing.
2. System will allow user to select beneficiary as per government instructions, to whom payment needs to be done and submit for approval. This request will be initiated in e-HRMIS and shared with IFMIS Next Gen for further processing.
3. If the nomination details are not available, the system should provide functionality for DDO to enter nomination details. This request will be initiated in e-HRMIS and shared with IFMIS Next Gen for further processing.
4. Upon receipt of the request, IFMIS Next Gen will capture the approval of competent authority and generate necessary orders
5. IFMIS Next Gen will allow creation, editing and submission of bill for ex-gratia/grant payment to Bill Management System module
6. System will also send intimation to pension module for initiating pension process
7. For the payment of the amount of Ex Gratia, the facility of making payment to more than one nominee should be provided.

All such payments shall be the part of the Service Record of the employee. IFMIS Next Gen shall share the payment acknowledgement with e-HRMIS.

3.2.14 Employee Master Management

1. SI, in consultation with DTA, to define where and at what level the employee code will be created.
2. Provisions for integrations and e-KYC features, such as SAMAGRA Integration and the Aadhaar-enabled Payment System should be developed.
3. The system should keep a log of data sources for all the fields populated in the employee profile specifying which details are sourced/ verified from which sources.
4. Provisions to check for duplicate or dummy/ fake employee records should be enabled in the system.
5. User Code Detailing:
 - Create Regular, Non-Regular, and Mandeyi/ Mansevi/IA user codes under different categories such as New, Convert, and Anukampa.
 - For Convert Employee Codes, multiple transitions to be handled as follows:
 - Regular to Regular

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- Regular to Non-Regular
 - Non-Regular to Regular
 - Non-Regular to Non-Regular NPS
6. Provisions should be added for generating various ad-hoc reports at the BCO/HOD/Admin Department level.
 7. The system should explicitly include functionality for analyzing employee data efficiently.
 8. The system should have provisions to comply with CTA-level circulars related to employee data changes, such as those for Date of Birth (DOB), Date of Joining (DOJ), Bank Account changes, etc.

3.3 Pension, Provident Fund and Insurance Management

Directorate of Pension, Provident Fund and Insurance (Pension Office) is the Head of Department (HOD) office under the Finance Department which is responsible for management of pension, provident fund (GPF, DPF) and General Insurance Scheme (GIS)/ pensioners. It is also the nodal office for implementation of National Pension System (NPS) and UPS for the state. The retiral benefits for the pensioner post-retirement are pension, death cum retirement gratuity, commutation, leave encashment, GPF/DPF, GIS/FBF and travelling allowance. Monthly pension is paid to state government employees who have joined before 1st January 2005. The employees who have joined on/or after 1st January 2005 are eligible for NPS. The envisaged system should enable pension payment as per prevailing rules in the state.

Pension, Provident Fund and Insurance Management	New Pension Case	Provisional / Anticipatory Case Processing	Provisional / Anticipatory to Final Case Conversion
	Special Case	Conversion of Regular Pension to Family Pension	Revision Case
	Pension Case Management	Life Certificate Processing	Pension Payment
	Arrear Payment	Post payment Recoveries	NPS Registration
	PRAN Mapping	Inter Sector Shifting (ISS)	NPS Salary Generation, Contribution deduction
	Data & Fund Transfer with Interest Calculation and NPS Missing Credits	NPS Exit Management	PF and GIS Management

Figure 7: Pension Management

In IFMIS Next Gen, pension processing will be completely digitized and Pensioners will also be able to access their profiles in IFMIS Next Gen for viewing status of pension cases, raising grievance etc. The DDOs will initiate new pension case in IFMIS which would be sent to Pension Office. Pension Office will receive the case in IFMIS and conduct the pension processing. After the pension processing is completed, first payment will be released from expenditure module and agency bank would be notified for monthly pension payments to the employee. The case would move to the Document Management System, from where it could be accessed for future payment revision.

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It is proposed that the monthly pension payments to the pensioner shall be done centrally from Directorate of Pension, Provident Fund and Insurance, Bhopal.

The Unified Pension Scheme for state government employees is a retirement benefit program designed to provide financial security to government employees upon retirement. Provision for UPS scheme in envisaged system shall also be implemented as per the GoMP rules.

The envisaged system should generate pension slip from centralized pension unit and share pensioners' data with agency banks in electronic format through API integration.

The envisaged system should also provide functionality for pensioners to download pension slip from centralized pension unit system.

There should be provision for maintenance of pensioner database (including master tables) with facility to update data (if required) through interfaces. Legacy database from various systems like IFMIS 1.0, banks, etc. should be made available in IFMIS Next Gen.

Other than the pension for the state government employees, the following pensioners also need to be managed through the IFMIS Next Gen system

- Central Government
- Defence
- Railway
- Other state PPOs
- MISA Bandi
- State political pensioners (MP, MLA, etc.)
- Freedom fighters
- Judicial pensioners

3.3.1 New Pension Case

The Employee must complete the e-HRMIS exit process successfully in order to get enrolled for New Pension Case Processing in IFMIS Next Gen. On successful completion of exit process in e-HRMIS, the data should be available in IFMIS Next Gen for pension case processing. The envisaged system should generate an exit management compliance checklist for an outgoing employee and send the same for necessary action.

1. System should generate list of superannuating employees for Pension Office, as per the defined timeline before the retirement, for pension case processing.
2. System should also notify employees for completion of their exit process.
3. After employee completes the exit management process, pension case should be generated in the Pension module.
4. Employees should be able to check, verify, initiate updation in case of discrepancy, re-verify after updation, and should be able to ensure that all information like profile post and bank details, nominations, family details are correct. Then, the employee should be able to upload relevant documents i.e., joint photo, signature, indemnity bond and other

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required documents as per defined processes to generate their own pension case and to submit it to the competent authority. This process should also be facilitated through Mobile Application. The system should have facility to display the gaps in pensioners checklist for monitoring purposes.

5. The system should provide printing, editing, retrieving and re-submission facility. Authorised kiosk/ CSCs/ Agencies should be able to access and provide handholding support to the employee.
6. The envisaged system should allow the Employee to submit the pension case for further processing by checking, verifying and approving all pension relevant details like employee details, pay details, DE/court case, calculations, documents and information received from various stakeholders.
7. Once approved by the Competent Authority pension case should be forwarded to the Pension Authorisation Authority. The competent authority should also have facility to upload NOC / other documents.
8. Concerned Pension Authorisation offices for different categories of employees like DPOs/AG offices based on Government decision time to time, should be mapped in the envisaged system
9. At present pension cases for state employees are processed by District Pension Offices and Accountant General processes pension for following employee categories.
 - a. All India Services (IAS/IPS/IFS)
 - b. Divisional Accountants
 - c. High court judges
 - d. Constitutional authorities like Lokayukt, State Election commissioners, Ex-MLAs
 - e. Upon receipt of the case, the system should allow the DPO to seek necessary clarifications from the employee, present office, other related offices. Reversal, editing, new entries, uploading facilities should be allowed for authorized users.
10. In case of categories of pensioners falling under the purview of AG system should provide user access to AG for downloading employee data in multiple formats including CSV, pdf, excel etc.
11. Accountant General may use their own process /system for pension case processing.
12. For other categories of employees, system should provide functionality for Pension Office user to verify the following employee data
 - f. Service Records
 - g. Family details
 - h. Nominee details
 - i. Personal details (religion, correspondence, and permanent address, etc.)
 - j. Bank details

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- k. Photographs
 - l. Certificates
 - m. Last Salary
 - n. Increment & pay commissions details
 - o. Departmental Enquiry/Court Case details
 - p. No dues
 - q. DPF/GPF requests
 - r. Other relevant documents and details
13. If after the death of an employee, at the time of case processing, the nominee of that employee also dies, and the same is reported in the system by the next of kin, then the system should have option to prompt for details of the "nominee/ successors of the nominee in case of gratuity and other retirement benefits". In case of family pension, system should prompt for details of next eligible family pensioner(s). This should be governed by the State Pension rules.
14. System should provide functionality for calculation of all the recoveries to be made from the pensioner, to be printed on the PPO.
15. System should auto-calculate share of Madhya Pradesh and Chhattisgarh in the pension.
= Provision of multiple expenditure classification row should be present in single voucher (e.g. Bifurcation of Pension cases b/w MP and Chhattisgarh)
 - a. System should have provision to generate separate bills (pension, graduating, commutation and leave encasement withdrawal) for united M.P. and new M.P.
 - b. Interest calculation in case of MP / CG Bill preparation and fund transfer should be done through Book Transfer (BT) process.
16. System should generate the required/ interim pension and gratuity based on prevalent rules of the state.
17. System should auto-calculate the basic pension, reduced pension, gratuity, commutation, DPF/ GPF, GIS, DR rate, DR amount etc. (in case of commutation opted, system should calculate commutation as per Pension Rules of GoMP).
18. After reviewing the calculations on pension and recoveries, system should provide functionality to the user for seeking approval from relevant pension authorities.
19. After approvals are received, system should generate a digitally signed Pension Payment Order (PPO)
20. System should send intimation to pensioner upon PPO generation through SMS, email and other methods as finalized in consultation with DoPPFI/CTA.
21. The envisaged system should also allow sharing of PPOs/GPOs/CPOs over multiple channels such as email etc.
22. After the PPO is issued, if required, system should have provision to rectify it at the District level, based on prevailing rules.

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23. The system should allow configuration of required forms in English and Hindi

24. The envisaged system should ensure the following –

- Bank scrolls must be available for pension payments by Government of Madhya Pradesh on behalf of other states.
- Total contribution received through challans under NPS system should be available in IFMIS.
- Challan received through cyber treasury should be synced automatically with employee contribution master and same should be shared with NSDL

3.3.2 Provisional / Anticipatory Case Processing

If the department finds that all relevant information/ documents are not available, Pension officer can sanction anticipatory pension, on request of department which will be converted into final pension once pension office receives all missing information/ documents from department/ employee. For provisional pension, in case an employee has departmental enquiry or court cases pending at the time of pension commencement date, pension will not be sanctioned but the department can decide to sanction provisional pension. Once the court case or departmental enquiry is finalised, Pension Office will convert such provisional or anticipatory pension cases to final pension. In case provisional/ anticipatory pension is sanctioned by departmental user offline, all relevant details should be captured by the departmental user in the system.

1. e-HRMIS should transfer information of departmental enquiry and court cases to Pension module of IFMIS Next Gen. If not available, system should have facility to capture details in IFMIS Next Gen, which should then be shared back with e-HRMIS.
2. System should allow departmental user to raise request for provisional/ anticipatory pension
3. After approval, system should forward the provisional/ anticipatory pension to the Pension Office
4. System should allow Pension Office user to verify all the documents and details submitted by department
5. System should calculate GIS/ PF amount for payment to pensioner based on prevailing rules
6. System should generate PPO, PF and GIS order and send intimation to the pensioner
7. The system should allow sharing of PPOs/GPOs/CPOs over multiple channels such as email etc.

3.3.3 Provisional/ Anticipatory to Final Case Conversion

1. After the final decision on department enquiry/ court case, department user should upload a copy of the decision on e-HRMIS portal which will be reflected in IFMIS Next Gen.
2. Departmental user should access the pension module to open the already sanctioned provisional pension case to verify details routed from e-HRMIS.
3. The relevant details of the case should be updated and relevant documents be uploaded in e-HRMIS by departmental user to finalise the case then procedure mentioned in 3.3.1 will be followed to issue PPO/ GPO/ CPO
4. System should allow the Disbursement office for further payment processing
5. System should send notification to the pensioner through SMS, email etc.

3.3.4 Special Case

There may be some cases where Competent Authority issues an order based on court decisions or any other reason to relax pension rules and sanction pension to an employee. To process such pension cases, option should be provided within the system to flag such cases and process them as normal pension cases.

3.3.5 Conversion of Regular Pension to Family Pension

From the next date of demise of pensioner, family pension must be initiated. The relevant rules should be configured in the system for this. The system should enable the following functionalities –

1. System should identify the cases for which Life Certificate has not been submitted for a long time (configurable as per prevailing rules) and issue intimation through multiple channels (mobile, SMS, e-mail etc.) to the pensioner and family pensioner for submission of Life Certificate or to inform regarding events like demise, re-marriage or re-employment of the pensioner. System should have facility to capture contact details of the spouse or other nominees.
2. Once death certificate, re-marriage or re-employment certificate has been received from the pensioner or its nominee, system should flag such cases where regular pension will have to be discontinued. In case of demise, system should prompt payment of family pension if family pension has already been sanctioned and mentioned against the pension payment records.
3. The system should allow integration with Janm-Mrityu Registrar Portal (Death certificate)/ e-Nagar Palika and Bank applications for seamless and real time Life certificate/ Death certificate capture.

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4. System should have reconciliation functionality for amounts credited in bank account and amount debited from bank account as per payment advice.
5. If family pension has not been sanctioned, system should capture details of the family pensioner along with prescribed certificates/ formats at DDO/ DPO level to process sanction of family pension. A separate PPO should be issued by DPO once it is sanctioned, for further payment by the Disbursement Authority.

3.3.6 Revision Case

A PPO/ GPO/ CPO or pension/ gratuity/ commutation amount can be revised due to following reasons.

- Any wrong entry made in the documents
- Any change in pay (backdated) due to revision of fixation, court cases, promotion, Kramonnati, time scale, increment etc.
- Any change in qualifying service
- Any change in pay commission (backdated) i.e. prior to the date of retirement
- Any change in pension due to pay commission post retirement

In all such cases, only updation/ correction letter/ intimation should be issued along with the original PPO/GPO/CPO. Original documents should remain same with the original PPO/ GPO/ CPO no.

1. In cases mentioned in bullets 1 to 4 above, Pension Officer will access original pension documents to be revised. PO will capture/ update information and upload documents received from department/ pensioner/ any other competent authority to instruct Pension Officer and generate a letter in a pre-defined format mentioning updated information. In case pension amount has to be changed or revised, system should recalculate pension/ gratuity/ commutation amounts on the basis of the updates made by the pension officer and the revised amount should appear in the revision letter. Rules for such updates should be configured in the system.
2. All corrections/ revisions of data/ information/ document (like pdf, etc.) should be shared by the system to pension disbursement office for further action. Disbursement office to recover/ pay arrear amounts on basis of revision letter/ data and communicate the same to pension sanction authority as well as pension office. Relevant notifications should be issued in this regard.
3. In case pension revision due to changes in pay commission post retirement and in case of pension enhancement on the basis of pensioner's age, Pension Disbursement Authority should be provided an option to access the case and verify revised amount of pension and provide approval which will be reflected in the system for future payments and arrears should be calculated by the system and made available to Disbursement Officer for payment.

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4. System should have provision to calculate/ revise pension amount on the basis of revision due to any change in the pay/ pension/ age etc. including future pay commission. Rules for the same should be configured in the system. Any change to such rules should be managed through the rule interface.
5. System will forward the revised payment authorities to the Disbursement Office/ Treasury for payment processing.
6. System will send notification to the pensioner through SMS, email etc.

3.3.7 Pension Case Management

Pension Case Management module will be used for transfer of pension cases based on the following scenarios or any other rule as defined by the Competent Authority.

- a) Bank to Bank/ branch – transfer from Paying branch to another branch/ Public Sector Bank
- b) Bank account Transfer
- c) Inter-State Transfer
- d) Inter-District Transfer

The system will provide below functionalities for case management –

1. System should allow the pensioner to submit request for transfer of pension case.
2. System should have the option to define and revise transfer policy rules through the rule interface.
3. System should have the option to allow workflow-based review and approval.
4. System should allow the pensioner to track the status of their requests online and through the mobile application.
5. System should display claims submitted by other States' AG, based on PPOs sent by AGMP to other State's AG for making pension payment.

3.3.8 Life Certificate Processing

Life certificate processing should be done digitally through Jeevan Pramaan linked with Aadhar or AEPS. This should be done through integrations.

1. Pensioners will download Jeevan Pramaan app and IFMIS Next Gen app on their smartphones

[Out of IFMIS NextGen]

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2. Pensioner will generate Life Certificate from the app

[Out of IFMIS NextGen]
3. Jeevan Pramaan will send the life certificate to Bank/Pension Office

[Out of IFMIS NextGen]
4. System should have the facility to fetch relevant data from Jeevan Praman App
5. The system should provide Life certificate submission facility through video calling/ video recording the pensioner. This option should be enabled in the IFMIS Next Gen mobile app.
6. System should receive final approval from Pension Disbursing Authority and update life status
7. System should send notification to the pensioner through SMS, email etc.
8. The envisaged system should also enable the process of capturing records like demise details of the pensioner / family pensioner, family pension start date, closure of PPO, etc. and stopping pension payments as per applicable rules.
9. The system should integrate with Digi locker for electronic storage and retrieval of Pension Payment Order (PPO).
10. The system should also allow pensioners to sign requisite documents using e-sign or DSC.

3.3.9 Pension Payment

The first and recurring monthly pension payments will be done by Pension Office for the state based on the data available in Pension module. Alternately, the envisaged system should also allow payment through bank integration.

1. System should generate the list of pensioners whose pension will be selected for monthly claim request based on queries like categories, head of accounts, not paid for certain period, age, etc.
2. System should have an interface with AGMP for collecting the data of the pensioners of MP Government receiving pension from other state and other state Pensioners residing in MP and receiving Pension from MP for interstate adjustments.
3. System should auto-generate pension bill for pensioners of the state as per desired selection.
4. System should provide functionality to generate the monthly variation.
5. System should generate this variation list to determine the increase/ decrease in the number of Pensioners. Such variation list will be generated component wise

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separately for DR, Basic Pension, recoveries, arrears or consolidated variation list for all the components.

6. Pension Office will finalize the pension before a cut-off date at the end of month
7. System should submit the payment bill to expenditure module for approved pensioners.
8. The pension payment should be done through e-Kuber or any other payment channel finalized in consultation with CTA.
9. After dispatch to e-kuber, system should send intimation to pensioner through multiple channels such as e-mail, SMS, mobile application, WhatsApp etc.
10. System should automatically update and continue to update pension to be paid to the pensioner even if pension case gets transferred to external disbursement agency i.e. bank.
11. System should have integration with external payment agencies to get payment/status as per the need.
12. System should also display the pension payment reports for reconciliation of payment details as well as difference (MoE) statements.
13. System should provide rectification process work flow for errors from both sides (Pension Office and Pension Payment Agency).
14. System should provide facility to deduct TDS, calculate income tax to generate Form 16A. Relevant rules should be configured in the system.
15. System should provide functionality to display the revalidated tax pending through a dashboard on retirement date.
16. Mobile app should provide functionalities for grievance management, reports and providing required information to pensioners.
17. Facility to view status of pension case processing, pension payment slip, income tax statement, form 16, etc. should be provided.

3.3.10 Arrear Payment

Arrear payments arise due to case modification, revision, or life certificate delay. Usually, arrears are settled along with next month's pension payment. In some cases, arrears payment request can be processed separately.

1. System will capture arrear payment request from Pension Disbursing Office or other sources.

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2. System will allow Pension Office user to select the appropriate arrear type like Lifetime Arrear and PPO number/Revised PPO date
3. System will allow Pension Office user to divide arrear payment into multiple tranches
4. System will provide functionality for Pension Office user to create arrear bill for multiple arrears
5. System will submit arrear payment bill to expenditure module for payment
6. System will send notification to the pensioner through SMS, email etc.
7. LTA - System should have functionality to select pensioner, bill type, financial year and month for which bill needs to be generated.
8. System should provide functionality to enter all the required details and submit bill to the expenditure module
9. System should provide facility to update the pensioner category/ class/ nominee details/ bank details of the nominee etc. at DPO level during generation of the LTA Bill.

3.3.11 Post Payment Recoveries

1. Post Payment Recoveries arise due to reduction in pension, excess payment of pension, wrong revisions, non-execution of/ delayed execution of reduced rate, delayed information of demise or re marriage/re employment or any other information which affects pension payments, etc.
2. System will calculate excess amount paid to pensioner and will start recovery of the excess amount in monthly instalments not more than the percentage of pension fixed by Government time to time (at present one third of basic pension and DR). in case where recoveries cannot be made due to demise of pensioner, system will prompt further actions like issuance of notice to the family pensioner or their legal heir based on the available records in the system. The system should generate the recovery plan for such excess payments.
3. System will have functionality for re-payment of the recovered payment as a whole or its part if recoveries are waived off by the Competent Authority with interest. Rules for such scenarios shall be configured in the system. Changes to such rules should be allowed to authorized users through the rule interface based on prevailing rules.

3.3.12 NPS Registration

PRAN Generation

1. System should have the ability to maintain the database of employees covered under NPS. New employees will be required to generate PRAN for NPS.

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2. System will allow new employee to access system as a “new user” and initiate the registration process for PRAN (CSRF 1/S1 Form). The Employee code and other details will be made available through e-HRMIS integration.
3. If there is no post available for the employee, concerned DDO will initiate request to update the cadre information in the system. Request will be forwarded to HoAD for verification, The HoAD will forward this request along with proper cadre sanction order to CTA for approval.
4. System will provide the functionality to new employee to enter, verify and edit the employee details and to affix/upload stamp, photo, signatures along with e-signatures facility along with relevant documents (certification of date of birth & ID/address proof) and provide verification and approval through departmental user.
5. Approved registration request will move to the Pension office for further validation, error rectification, approval and uploading (if required) for the generation of PRAN
6. Once approved, this data will be available to generate file prescribed by CRA to upload or to be submitted by Pension Office to CRA. The envisaged system should be integrated with CRA systems to seamlessly exchange this information and receive acknowledgement on the same.
7. Once PRAN is generated by CRA and made available to Pension office for information and further processing, information will be consumed by IFMIS Next Gen for PRAN Mapping. In absence of integration, system will have facility to upload PRAN file for PRAN mapping by Pension office.
8. System will send intimation to the departmental user for the traceability of rejected PRAN applications along with defined reason from CRA application.
9. System will also have the provision to generate the separate SRF for each CRA.

CTA/ DoPPFI Registration

1. System will provide facility to capture details of CTA/DoPPFI for registration/updation in CRA once captured and approved by the competent authority. Details will be shared with CRA portal for generation of registration number through integration of the interface.

Treasury or Pension Office Registration

1. System will provide facility to capture details of Treasury office or Pension office for registration/updation with CRA by pension officer. Once captured and approved by the Competent Authority (DoPPFI) details will be shared with CRA for generation of registration number through integrations.

DDO Registration

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1. System will provide facility to capture details of DDO for registration/updation in distinct CRAs (e-PROTEAN & K-FinTech) by pension officer. Once captured and approved by the Competent Authority (DPO/DTO) details will be shared with CRA portal for generation of registration number through integration of the interface.
2. Facility to switch any DDO from one CRA to other should be available.

State Autonomous Body (SAB) Registration

1. System will provide facility to capture details of SAB for registration/updation with CRA by Competent Authority of SAB. Once captured and approved by the Nodal Officer appointed by the Administrative Department for that SAB, application/data will be sent to DoPPFI for further activities. DoPPFI will examine the eligibility if it is found eligible, DoPPFI will inform CRA as well as PFRDA and NPS Trust for record keeping. Notifications to these agencies and their authorized users should be enabled through IFMIS Next Gen.
2. Monitoring of SAB – system will provide facility to monitor activities of SABs with respect to the rules, regulation, notifications, etc. The envisaged system will provide all type of required reports for the same.

Audit

1. System should provide a facility to audit activities of Treasury office, Pension Office and SABs with respect to rules, regulation, notifications, etc. For this, the system will provide required reports and analytical tools/ dashboards to the auditor and all other relevant authorities. A checklist for the audit should also be configured in the system and open observations should be monitored for closure.

3.3.13 PRAN Mapping

At the time of registration of new employee, if the employee already has a PRAN (previously generated with any sector profile), system will provide the option for capturing of existing PRAN at the time of employee code generation (evidence of PRAN to be uploaded) in such cases, CSRF 1/S1 Form will not be generated and hence, will not move to CRA.

1. The PRAN captured will be mapped with new employee code generated by the system.
2. The system should allow authorised user to edit the mapping of PRAN with generated employee code after due approvals.
3. The system should allow authorised user to activate/deactivate an existing PRAN by the system by initiating the request to CRA.
4. System should generate logs and keep track of all changes made by users.

3.3.14 Inter Sector Shifting (ISS) and Inter CRA Shifting

Process to be followed as prescribed by CRA in CRA portal. IFMIS Next Gen will allow submission of necessary forms as prescribed by CRA for ISS. Once approved, these requests should be shared with CRA for further processing and acknowledgement.

3.3.15 NPS Salary Generation and Contribution Deduction

There are two types of employees who are eligible for NPS deduction.

1. Regular including work charge regular employees and regular employees on deputation from other governments, salary of these categories be generated by the system using existing database on regular salary bill format. NPS government contribution for these employees debited from the HoA.
2. Non-regular like Sthayikarmi, daily wagers. Salary of these categories be generated by the system using existing database on FVC bill format. NPS government contribution for these employees debited from service HoA.

For Category 1 - Online salary bill generation

1. System will generate the salary bills deducting employee contribution as decided by government from time to time and crediting in HoA decided by the government (at present rate of contribution is 10% of Basic + DA and HoA to be credited is 0071-00-500). Simultaneously system will generate government contribution bill debiting 2071-00-117 and credit by-transfer to the same HoA i.e. 0071-00-500.
2. System will generate refund bill debiting 2071-00-900 against challan amount credited as per serial number 1. System will have tracking/mapping of government contribution bill and employee contribution bill/ challans. System will not permit any other salary bill to be passed by treasury if refund bills are kept pending for the day prior to current date. Relevant validation regarding budget availability should be provided in IFMIS Next Gen.
3. E-file for cheques related to refund bill will not be allowed prior to payment of salary to employee (Amount of refund bill will not be credited to the authorised account of DoPPFI prior to the date when salary credited in employees accounts). If original salary bill/cheque is cancelled for any reasons, simultaneously government contribution as well as refund bill against refunds of challan related to such bills will also have to be cancelled. The system should automatically cancel the same.
4. System will prepare a reconciliation report for employee wise/DDO wise transactions related to EC/GC and refund amount and generate MoE to be rectified by DDO and TO.
5. For Category 1 - Salary bill generation without using existing database

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6. In rare conditions, system will allow capturing of salary bills/arrear services with EC. In such cases, system will prompt capturing of employee wise contribution. Based on EC details system will auto-generate GC bill and refund bill as described in Category 1 - Online salary bill generation.
7. System will also provide functionality to prepare Nil Bill for GC of employees for which employees are entitled but could not be paid for e.g., Government declares eligibility for a certain group of employees post facto or increase rate of GC post facto or additional GC be decided by the government post facto. System will also have functionality for bill generation for interest on NPS contribution as declared by the government. Contribution percentage along with date of effect and last date of effect shall be managed through relevant masters.
8. If EC and/or GC deposited by employee or any agency for the employee through a challan in bank (either physical or electronic), system should have the functionality to capture employee and PRAN details through the challans and generate refund bill against such challans deposited.
9. One month prior to date of retirement, EC not to be deducted from the salary bill. GC bills for these employees will be generated along with other employees but will be paid/credited into employees account not to DoPPFI directly. Similarly, if employees are but their salary are to be paid after retirement, EC will not be deducted from the bill but GC bills for these will be generated along with other employees, but GC amount will be paid to the employee directly.
10. For any reasons if salary of an employee increases from back date, system will generate arrear bill and deduct EC and GC and its refund bill.
11. System will flag contribution as regular month/partial salary for regular month, arrear for certain period/interest. Month/period shall also be captured.
12. There should be a provision in the system that if exit process of an employee has been initiated and approved by concerned DTO/DPO then PRAN of the concerned employee should be de-activated in IFMIS Next Gen and further claims of the employee with regards to the salary (after exit process) should be generated without NPS deductions and should be paid to the concerned employee with GC.
13. System will provide functionality for reconciliation of system data, bank data, CRA data and will provide Memorandum of Error (MoE) and its rectification process. For this, integration/ interface with bank and CRA will be provided.

For Category 2

1. System will generate salary bills including GC HoA. EC and GC amount will be credited in DoPPFI bank account.
2. In last month salary. EC and GC amount will be credited to the employee bank account directly. Similarly, EC and GC for any month/arrears to be paid after

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retirement or within one month of retirement will be credited to the employee account directly.

3. Government at any time can decide that salary bills and contribution deduction process for regular employees or group of regular employees will be as non-regular employees. In that case, system will have the required procedure for such regular employees
4. At the end of every month system will generate a Nil bill debiting 2071-00-117 and minus debit to service HoA to ensure that all GC amount will be booked in relevant pension head.
5. Mapping/tracking/reconciliation/MoE/rectification of MoE will be applicable for all categories mentioned above.

3.3.16 Data and Fund transfer with interest calculation and NPS Missing Credits

1. System will generate SCF file separately for each CRA either centrally or locally which includes all data credited to EC and GC and refund (excluding those amounts which are credited to employees' bank account directly).
2. SCF file will be shared with CRA through integration. System should generate a payment advice based on approved SCF for the total amount of SCF to be shared with bank which will have employee wise amount details mapped with the contribution data.
3. System will have reconciliation functionality for amounts be credited in bank account and amount debited from bank account as per payment advice.
4. On the basis of reconciliation mentioned, system will prepare report of employee wise missing credits which will be shared with all relevant stakeholders.
5. System will prompt relevant user to rectify missing credits
6. System will capture transaction ID shared by CRA and generate a SCF for transferring NPS Contribution to trustee bank from accredited bank.
7. System will provide the SCF to trustee bank after processing contribution bill in expenditure module

[Out of IFMIS NextGen]

8. System will allow the user to generate SCF and upload employee details, employee contribution, interest on interest and auto calculate the interest.
9. CRA will reconcile payment against PRAN contribution details available with them and share confirmation with Pension Office through integration.

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10. [Out of IFMIS NextGen]
11. In case government decide that DoPPFI will work as CRA also, system will be integrated with the system to be developed by DoPPFI to function as CRA.

3.3.17 NPS Exit Management

System will generate list of employees to retire in the next 2 years or in case of death/dismissal, to be made available to relevant users like DDO/ Department/DPO/ Treasury/ DoPPFI to initiate exit process

1. System will provide functionality for gratuity to NPS employees as per relevant rules
2. Other retiral benefits like GIS/FBF, leave encashment, TA ex -gratia, special ex gratia, process will be same as OPS.
3. System will be integrated with CRA to provide the functionality to raise exit requests
4. System will allow the Pension Office user to verify the withdrawal request along with supporting documents and authorize the withdrawal request to be shared with the in CRA.
5. Once the request is authorised and then it will be placed in CRA system for redemption of units from the Subscriber's PRAN to their registered bank details.
6. System will disseminate/notify the information to the concerned Subscriber as well as Pension Office.
7. NPS will have also have the provision for generating NPS reports and reconciliation.
8. If required due to the change in government policies, NPS to OPS, or reverse process, should be developed in IFMIS Next Gen.

3.3.18 PF and GIS Management

As per section 3.2.12.

3.3.19 Insurance

The system should have facility for management of the following for insurance claim and payments:

- Family Benefit Fund (FBF), 1974
- Group Pension Scheme (GPS), 1985
- Group Insurance Scheme (GIS), 2003

3.4 Cash Management

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Owing to uncertainties associated with the timing of cash inflows and outflows, it is important to (i) prepare cash-flow forecasts to aid in estimating the liquidity requirements of the State on a timely basis, (ii) and monitor and use applicable schemes of RBI (SDF/ WMA/ OD) to manage short-term cash requirements (cash management).

This module will assist Finance Department in assessing the cash position of the state by recording and compiling all the cash receipts and disbursement of the state. The functionality will be interfaced with internal and external stakeholders for recording current and anticipated cash flows.

As stated earlier, RBI shares a Clearance Memo with the Finance Department of the states every day. The memo records all cash transactions undertaken by the state government, thereby depicting the cash position of the state.

Financial transactions of the state are segregated into the following key categories, which combined indicate the cash position of the state and Treasury Bill (T-Bill) holdings. The envisaged system should allow entry of the cash transactions, in which payments were made directly through cash receipts.

Receipts	Expenditure
Agency Bank & E-Kuber	Agency Bank & E-Kuber
GST	Normal IG Transaction
Normal IG Transaction	Repayment of Loans – Principle & Interest
Maturity & rediscounting of T-Bill	Charges by RBI
Interest on T-Bill Investment	Payments to other States
Grants from Government of India	Adjustments by RBI or Ministries
Share in Central Taxes	Interest paid on Public account (GPF/DPF)
Loan Receipt	Contingent Liabilities (Amount under court decrees)
Receipt from Other States	Loans to PSUs, Corporations, any entity etc.
Adjustments by RBI or Ministries	Grant-in-Aid to departments, PSUs, Corporations, any entity (Conditional/ Unconditional)
Aid from World Bank/ IMF	Other Payments
Disinvestment of any Assets	
Disinvestment in PSUs	
Other Receipts	

Table 6: Components of Cash Position

The key components under cash management module are listed below



Figure 8: Cash Management

3.4.1 Clearance Memo

1. System should receive Clearance Memo from e-Kuber and allow the user to map transactions to relevant budget heads, projects, schemes etc.
2. System should be able to record all transactions of the state as available in RBI clearance memo
3. System should allow user to map all the transaction to relevant transaction categories.
4. Indicative list of transactions that system should capture is mentioned below
 - GoI transactions
 - E-Kuber transactions
 - Agency bank transactions
 - Public Account transactions
 - Intergovernmental Adjustments
 - Investment, maturity and rediscounting of T-Bill
 - Loan receipt, interest payment and principal repayment
 - SDF/Ways & Means Advances/Overdraft receipt and repayment

3.4.2 RBI Advances

State Government avails short term lending from RBI to cover temporary shortage in cash flows.

1. System should allow finance department user to identify cash shortages for specified period
2. In case of Special Drawing Facility (SDF), system should provide a workflow for Finance department user to seek approval from designated approver through the system
3. After approval of Finance Department, the user should be able to send request to RBI digitally along with system led generation of documents for SDF
4. System should capture receipt of advance (SDF, WMA, OD) after it is disbursed by RBI and reflect it in Loan Account
5. System should capture deduction from Consolidated Fund of state done by RBI on advance recoulement

3.4.3 Intergovernmental Transfers

System should allow Finance Department user to view all the intergovernmental transfers and adjustments that are captured from the Clearance Memo which is prepared by RBI based on input from AG. The system should allow generation of various reports on such transfers through a self-service dashboard. System should have functionality to raise query in case of mismatch for reconciliation with AG.

3.4.4 Cash Forecasting/Cash Commitment Control

1. Cash forecasting is necessary for the states to plan its expenditure and borrowing schedules. Cash forecasting should take in account historical data as well as planned receipts and expenditures to provide a comprehensive view of projected liquidity position of the state.
2. System should have a functionality for BCOs/DDOs to generate monthly/quarterly expenditure plans.
3. The system should generate a view of future cash flows across multiple time periods based on the historical data and the expenditure plans submitted by BCOs/DDOs.
4. System shall allow generation of cash flow forecasts based on a pre-defined algorithm keeping into account seasonalities, historical trends and risk buffers. The algorithm should be configurable in the system by Authorized users of the Finance Department.
5. System should also have the provision of viewing and analysing following forecasts at a minimum –
 - i. Receipt estimates (Tax, Non-Tax, Grants from GoI etc.) at budget head and department level
 - ii. Expenditure estimates at budget head and department level
 - iii. Debt estimates (Receipts, interest payment principal repayments)
 - iv. Borrowing requirements and schedule
 - v. Future expenditure commitments
6. System should capture all information received on future receipts like schedule of grants from Government of India, schedule of SGST devolution etc.
7. System should capture all information received with respect to expenditures like repayment demands on debt, upcoming large payments etc.
8. System should consolidate all data above and generate cash flow forecasts.
9. System to establish a repository of information on all commitments emanating from (i) works (capital projects - across the lifecycle of the projects), (ii) non-works (schemes), (iii) employee entitlements (salaries to employees, fixed pay/ honoraria, bonus, dearness allowance, state insurance and PF, retirement benefits including pension, gratuity, commutation of pension etc.), (iv) grants to local governments, (v) debt repayments, (vi) pension, and (vii) other (includes all other planned commitments not captured in the previous six categories such as establishment expenses and involves an outgo from the Consolidated Fund of the State)
10. System to provide a consolidated view of multi-year commitments (emerging from works, non-works (schemes) and debt) and outstanding liabilities
11. System to provide information on the actual expenditure against the commitments for each of the seven categories of commitments mentioned above

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12. System to use above information for prioritization of projects/ schemes during budget meetings by ensuring that new commitments are taken up after due consideration of the existing/multi-year commitments
13. System to analyze variance between planned milestones and the actual expenditure during the financial year
14. System to provide timely inputs for estimating cash requirements in advance to make necessary provisions
15. System to have access to information necessary to assess borrowing requirement based on the gap between balance allocations and expected receipts for the current year.

3.5 Receipts Management

The Receipt Management module would provide functionalities to capture all payments received by the State on account of taxes, duties, grants, public and other heads. The key components of receipts management module are listed below.



Figure 9: Revenue Management

The envisaged system will capture the receipt data from various sources like –

- i. Cyber Treasury (Online Payments/ OTC)
- ii. Physical Challan
- iii. By Transfers from Expenditure
- iv. GST from RBI and GSTN
- v. Various Loans, Grants (National and International), Debts etc. (Clearance Memos of RBI and other sources) and PFMS

The envisaged Receipt Management module will be used to record and process the revenue/ loans/ grants received by the state through the digital mode (Cyber Treasury) by way of Challans generated by the system. Online transactions should be managed through the Cyber Treasury portal, to be designed and developed by the SI. The envisaged system should allow integration with Banks to view bank balance details for temporary or suspense accounts (in cases where deposit through Cyber Treasury is not possible as an exception) as per the decision of the Competent Authority.

The following are the key processes/ requirements –

3.5.1 Cyber Treasury: Online Challan Payment and OTC Challan Generation

IFMIS Next Gen should be equipped with a Cyber Treasury application and portal which will facilitate online receipts through multiple channels. All registered or unregistered users should be provided access for the Cyber Treasury module to submit the Challan. The system should present a templated form for registration of users. The form should, at a minimum, capture the name, address, unique identifier and other relevant fields decided in consultation with CTA. Upon submission of the form, the system should generate a unique User ID and password and share it with the user. The system should allow Aadhar based authentication of the user and subsequent logins.

The system should redirect to the bank/ payment portal for making the payment depending on the type of payment mechanism selected by the users. Submission of amounts for multiple HoAs through single transaction should be possible. Process of reconciliation should be provided for generation of real time challan for the cases, where transaction disrupts after deduction of the amount from the account of the user. The system should generate single ID or Unique Reference Number (URN) for challan submission with multiple HoAs, but unique Challan Reference Number (CRN) against each and every HoA separately. The system should generate a unique Challan Identification Number (CIN) on completion of transactions at the bank end for deposit of amount against each and every CRN.

Online receipts should also be enabled through integration with Department systems. The end users, citizens, beneficiaries/ vendors, etc. should be able to access the Department portal for challan generation. Post submission of the same, the user should get redirected to the Cyber Treasury system to make the payment, post which the user should be redirected back to the Department system. The system should record challans of all payments received by the State on account of Taxes, Duties, Grants, and other Heads. This should cover all scenarios of C2G, G2G, and B2G transactions. Challan generation should happen automatically once the required fields are submitted by the user in the Department portal. Key representative processes are listed below.

1. In case of online challan and online payments, the accounting of the amounts booked should be according to the list of Major & Minor Head of Gol and Budget volumes of GoMP. In addition, there should be provision to download the said challans from IFMIS Next Gen.
2. Payees (any individual/ industry/ agency/ Government Institution) should be able to make online payment of taxes and other dues to Government of Madhya Pradesh by accessing the cyber treasury portal.
3. Registered payees should be able to access online unified form (templated forms with validations) for the services/ taxes selected at the time of registration.
4. The form should have pre-filled details from registration phase. Registered users should only need to fill the amount against the appropriate receipt head
5. Un-registered users should also be able to access the online form and enter all the e-challan form details
6. The system should provide option to make payments through payment gateways.
The payment channels to be enabled in IFMIS Next Gen are listed below –

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- a. Credit card
 - b. Debit card
 - c. OTC/EFT
 - d. Routed to net banking
 - e. UPI applications
 - f. Wallet: registered user should be able to pre-load amount to its receipt management wallet and pay from it
 - g. QR code based challan processing
 - h. Fund transfer of field level challans (POS machines etc.)
 - i. Any other widely used payment channel. SI to finalize the channels in consultation with CTA.
 - j. E-payments mode of CBDC and ULI.
7. The system should also allow generation of a custom QR code (which can translate to the challan details, amount, purpose of payment etc) for quicker online payments by citizens and businesses. Users should be able to access/ scan the QR code generated for challan through their handheld devices and make seamless payments. The QR code should be tagged with received HoA of a particular purpose or multiple purpose.
8. The system should generate a unique ID for the Challan which will be the reference number for the transaction. The system should also allow creating a single challan for multiple heads of account or purposes.
9. The system should have facility to validate verified and non-verified challan at TO level.
10. The payee should receive a notification of payment. The related BCO/ DDO for the payment/ budget head should also receive intimation of total receipts on a periodic basis.
11. The agency bank should validate and transfer the amount to appropriate receiver/ head and respond to IFMIS system with payment status. Alternatively, Banks will share the report with RBI and the reconciliation report and accounts will be shared by RBI with the State through IFMIS-e-Kuber integration.
12. The system should have provision to generate analytical reports for user for agency bank performance.
13. The payee should also have option to generate "Receipt" slip or "Challan" from the system for Over the Counter (OTC) payment
- a. This option should be enabled for selected scenarios – system should generate a Challan or Payment slip basis a pre-defined template as per MPTC rules.
 - b. This should enable, recording of payment request in the portal, and generate a specific OTC entry with unique number.
 - c. Once OTC challan is created, payment at the bank branch should be made within 7 days of challan creation or otherwise as per State rules. If not paid, the system should automatically cancel the challan request.
 - d. The payee may also visit the bank and deposit the amount through the system generated Challan. In this case, the bank should feed the payment details through a dedicated IFMIS Next Gen login provided to them

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14. The system should allow the DDO / Recipient authority to flag a challan as utilized / defaced or partially utilized / partially defaced. Such challans can be marked as inactive by the DDO.
15. addition of capturing physical challan (common challan form) over OTC on cyber.
16. Upload of QR based collection of challan in IFMIS (either by bank or treasury)

3.5.2 Bank Interface for Offline & OTC Challan Management

The offline or physical challan system should be allowed only in the scenarios in which amount cannot be submitted through cyber treasury. This functionality should be enabled in consultation with CTA as per prevailing rules of the state. In such cases, the Depositor would fill the prescribed form of challans physically and submit it at the bank and make the payment. The bank would receive the amount and return a stamped and signed copy of the counter-slip of the challan to the depositor. The bank should submit/ share e-scroll through integrations, in the format required in IFMIS Next Gen, based on the physical transactions incurred.

1. IFMIS Next Gen should provide access to Bank users to feed payment details for payment submitted through offline mode
2. Key payment parameters such as payee name, deposited amount, purpose, region/ location details, accounting heads etc. should be captured through the interface
3. Notifications and alerts regarding payments should be triggered
4. The system should verify and check the treasury mapped to the payment details submitted by bank, and route the transaction details to the relevant treasury
5. The Treasury Officer should have a dedicated list/ dashboard representing the Offline Payment/ Transactions done and details fed by Bank
6. Treasury Officers should review and reconcile the online transactions with the physical challan copies received from Banks.
7. System should provide facility to record the receipts made directly to the department.
8. Reports like Department wise report of payments made to a particular Department for a particular service and other relevant reports should be made available.

3.5.3 GST receipts

1. The envisaged system should allow processes for receipts reconciliation of GST. There should be three-way integration between IFMIS, GSTN and RBI for this purpose.
2. The accounting instruments under GST are as follows-
 - a. e-Challans - The digitally signed unpaid electronic Challan (CPIN) from GSTN.
 - b. The digitally signed fund loaded electronic challans (CINs) from GSTN, as received from the banks.
 - c. e-Sroll from Reserve Bank of India with transaction (CIN) level details.
 - d. Error correction scroll from RBI.

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- e. Monthly Statements of Cross Utilization of ITC and IGST apportionment (Settlement ledger) from GSTN.
 - f. Inter Government Advice (IGA) to RBI for settlement of funds between Centre and States.
 - g. Clearance Memo issued by the RBI.
 - h. e-Bill for Refund (sanctions and bills) of Tax
 - i. Department payment scroll from authorized banks for refunds.
 - j. Sanction order issued by competent authority for transfer of funds to welfare funds.
2. User logs in to the GSTN portal and after filling the necessary details, choosing the mode of payments generates a challan. An unpaid challan with CPIN number and 14 days' validity is generated. When the money is realized at the bank against this challan, a CIN is generated. Bank reports the CIN to RBI and GSTN, and sends funds realized to RBI.
 3. IFMIS Next Gen should be integrated with GSTN and RBI for the purpose of reconciliation of GST receipts.
 4. The envisaged system should capture CPIN/CIN details and scrolls from GSTN through integrations. These files should be consumed in IFMIS Next Gen and made available for reconciliation.
 5. The system should be capable of handling TCS, and TDS of GST / IT / Labour Cess / Other taxes.
 6. IFMIS Next Gen should also capture the collections from RBI through their SFTP server or other mechanism as agreed with RBI. IFMIS Next Gen should process these files. IFMIS Next Gen should also capture the Account Statement (AS) shared by RBI for details of the total collected amount.
 7. GSTN integration will provide Challan details for GST receipts of GoMP and these details will be reconciled against the payment confirmation shared by RBI. IFMIS Next Gen will have APIs required (as standardized by GSTN) for fetching the data from GSTN server and populate it in relevant cells. Challan Identification Number (CIN) of GSTN will serve as the unique identifier for reconciliation purpose.
 8. The reconciliation process will be enabled through a case management module in IFMIS to allow generation, tracking and resolution of MoE cases (inconsistencies in GST receipts) resolved by RBI and challans shared by GSTN.
 9. The SFTP server provisioned by RBI for the state will be used for sharing MoE cases with RBI for resolution

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10. After receipt of RBI credit notification and relevant reports/ challans of GST credit from GSTN, the system should generate a reconciliation report specifying the discrepancies in GST credit. Such discrepancies include missing Challans, duplicate challans, difference in amount against the same CIN etc. Every discrepancy should be identified using a case ID and all cases should be tracked till closure within IFMIS. IFMIS Next-Gen should allow generation of MoE file as per RBI templates. These files should be downloaded and shared with RBI through their SFTP server for resolution.
11. Access to the SFTP server will be as per RBI rules
12. IFMIS Next-Gen should maintain a comprehensive library of error codes for MoE cases, consistent with RBI rules and nomenclature
13. RBI response on the specific cases should be uploaded to IFMIS and tagged against relevant case IDs, the response code should be recorded
14. In case the response indicated excess GST credit to the State, the state should initiate the refund process by issuing a payment instruction to RBI as per relevant rules
15. IFMIS Next-Gen should allow authorized users to view the status of MoE cases and track open cases from time to time. A dashboard should be provided to authorized users of CTA, FD, Commercial tax Department to view the status of MoE cases and GST reconciliation

3.5.4 Income Tax receipts

The envisaged system should provide an option to generate 24G and 26Q through the TO login which can be subsequently filed through the Income tax portal. The details of deductions can be obtained from an internal integration with the payroll module. The system should integrate with CBDT portal for seamless filing of 24G and 26Q through APIs or any other mechanism agreed with CBDT.

3.5.5 Receipts of dividend of shareholdings in corporations

The State Government holds shares in some corporations from which it receives dividend income in State's DEMAT account. Upon receiving dividend in DEMAT account, FD sends request to bank to submit the dividend via challan to Cyber Treasury.

- System should allow submission of dividend income to Cyber Treasury through challan.
- System should generate a quarter-wise and year-wise dividend receipts report at a given point in time

3.5.6 Receipts Reconciliation

Agency Bank users should be allowed to upload the reconciliation report(s) on the portal daily or a pre-defined period as decided in consultation with CTA to check the portal transaction

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database is in sync with the payments received by the agency bank. Discrepancies, if any, should be resolved by the agency bank. Alternatively, the reconciliation reports should be captured in IFMIS Next Gen through integrations. Bank scroll upload is also required to compile list of transactions at the bank's end. The data from the scroll is used to reconcile the transactions (both electronic and OTC) and get the actual amounts in the coffers of the state. A facility shall be provided to the banks to upload the daily scrolls. A common format of the scroll and process to upload the scroll shall be developed. The Agency Bank admin should be allowed to digitally sign the e-scroll and upload the final digitally signed e-scroll on the portal daily.

The Treasury user should be able to verify the digital signature and approve the challan entries of e-scroll. Approved challans should be considered for accounting in the treasury. In case of Departmental Portal Integration, e-scroll should be uploaded on Cyber Treasury Portal and reconciled data be passed on to the respective departmental portals. The system should also allow receipt reconciliation through e-Kuber integration. Following functionalities should be enabled in IFMIS Next Gen –

1. IFMIS Next Gen should be integrated with agency banks/ e-kuber for seamless reconciliation of receipts
2. As described above, payee should be able to pay the amount through payment gateway and other payment channels against appropriate heads using the cyber treasury portal. The payment should get routed to Agency Bank and response from the bank should be recorded.
3. The system should also allow receipt reconciliation through e-kuber integration. The envisaged system should be able to consume and account the credit notification received from e-kuber.
4. Integration to be established with Agency banks to
 - a. Transfer the encrypted file through secured data exchange/ integration channel (API)
 - b. Receive the response message through integration channel (API)
 - c. Real-time/ Near real time update on Payment Reconciliation Status
 - d. The SI shall finalize the integration mechanism with banks in consultation with CTA.
5. The Agency Bank should reflect payment failure/ success status against the unique identification number of the challan (CIN)
6. The Cyber Treasury Admin Official should have viewing rights for challan reconciliation
7. The admin official should be able to approve/ update the challan reconciliation
8. The system should trigger notification to Bank
9. The reconciliation status of payment done through system generated Challan at OTC of Bank should be updated by the Bank Official through a dedicated login in IFMIS Next gen
10. The status should get reflected similar to Online Challans

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11. The Payment Reconciliation status, post approval and completion should get routed and updated in the General Ledger and Accounting modules
12. In case of failed payment – system should provide Treasury Officials provision to raise a request against the transaction line item to notify the payee . In case of wrong payment, system shall provide facility to change head of account and if depositor has deposited excess amount in government account, refund of over deposited amount can be done by the refund request process.
13. The envisaged system should allow Reconciliation of Receipts figures between VLC system of AG and IFMIS system. All BCOs shall submit “Reconciliation of receipts certificate” to AG office within the system.
14. The envisaged system should enable validation rules as per MPTC for linking of salary disbursements with monthly reconciliation of receipts for Revenue Departments.
15. System should enable generation of a templated certificate (credit or non-credit) to be signed digitally by Treasury Officer for certifying a deposit after realization of required fees as per the rules in MPTC 2020.
16. In the case of the physical challans generated outside the State Government IT system, all States, in coordination with agency banks, to have in place a system for generating a unique/challan reference number and to include these in the electronic files reported to RBI by agency banks, to help in reconciliation with State Government, in the short term till onboarding of all States to e-Kuber version 2.0. RBI to share the list of States who have already developed this mechanism.

3.5.7 Refund Request

Refund of receipts should be enabled through integration between cyber treasury and Department systems. The end user should be able to access the Department portal / Cyber treasury to select the challan against which refund is required, along with a rationale. Post submission of the same, the Recipient authority / DDO should vet the claim case and submit the request to the Treasury for reimbursement. In case the refund request is not valid, the claim should be rejected by the concerned DDO / Recipient authority with the reasons and rationale of the decision and the system should send notification to the end user on the contact number/ email, filled at the time of deposit of amount. In such case the workflow should not be redirected to the Treasury. In case of successful refund, the system should redirect the refund to SNA, PD, works or self-DDO, as the case may be.

The key functionalities are listed below –

1. There are scenarios where a payee has raised a challan and paid for availing some service or specific activity/ purpose, but eventually did not avail or consume the benefit. System should have provision to raise refund requests for such scenarios
2. The system should provide access to refund request process to end users through a templated form capturing the details of initial payment and original challan details
3. The request should get routed to the DDO or the recipient authority with which the payment/ challan was mapped

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4. System should provide facility to DDO to review, accept, reject the refund request based on the actual consumption status of the services against which the challan was raised.
5. The updated status of verification request should be visible to the TO and accordingly the TO should proceed for payment processing
6. Basis approval, the refund request should be considered for being added as an entry into the encrypted payment advisory file for fund disbursement
7. The system should track the status of challans basis their unique IDs and should not allow refund requests to be raised for the same challan multiple times or refund request for a value greater than the challan amount. Such validations should be enabled at the time of raising the refund request itself.
8. Without DDO approval, no refund order should be issued. Refund bills should be routed to the DDO directly
9. The system should track utilization of challan balance when a refund process is being issued
10. The system should allow the DDO / Recipient authority to flag a challan as utilized / defaced or partially utilized / partially defaced. Such challans can be marked as inactive by the DDO. Refund request should only be allowed to be raised for active challans.
11. System should have facility of bulk challan signing for a selected period of time, and these verified challans should be available for verification by the department and AG.
12. In order to capture the utilization of challan, system should have API based integration with the departments. Departments will select a challan for providing services to the depositor and information post-utilization of challan shall be communicated on Receipt module through reverse integration.
13. There should be a mechanism to process refund to original HoA for flagging and marking failed transaction of refund vouchers to DDO. The view access should also be provided to the AG.

Refund of Excess Payment/Receipt: Payee Side

1. The payee will be provided a facility to raise request to the concerned DDO for refund of excessive receipt along with the challan details of originally paid amount. Application will also have provision for claimant to raise the claim for refund from the treasury portal enclosing the original credit details.
2. Based on the claimant's request, DDO shall create and approve a Bill and forward it to Treasury for approval and refund payment. At the time of Bill creation system will verify original credit/receipt from State Receipt System based on challan No./CIN provided by the tax payer/claimant. If the Refund Claim is raised in the same financial year as that of receipt, then appropriate receipt head will be deducted from the bill else corresponding expenditure head will be used for accounting the refund.

3.6 Debt, Loan, Investments and Guarantee Management

Madhya Pradesh raises debts and borrowings from various sources to finance the fiscal deficit of the State. The State Government also provides guarantees for corporations and statutory bodies to raise capital. These borrowings and guarantees give rise to fiscal commitments and contingent liabilities for the State Government.

It is therefore important to put in place, necessary processes and systems for establishing and executing a strategy (i) to ensure that the government's financing needs and its payment obligations are met at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk (debt management) and (ii) to ascertain creditworthiness of corporations before issuing guarantees and tracking performance of corporations against the capital raised against guarantees (guarantee management).

Moreover, there also need to be mechanisms in place to invest in case of surplus funds and track receipts against the investments made by government thus augmenting resources of the state (investment management).



Figure 10: Debt Management

The Debt, investment, Loan and Guarantee Management module will include three broad functionalities along with associated sub-functionalities as defined below:

- **Debt Management:** Debt Management functionality will assist Finance department in management of the debt liabilities of the state. It will provide workflow for seeking approval for raising debt. It will also support interest payments and principal repayments, maintenance of terms & conditions, land closure as well as reporting on all debt liabilities of the state.
- **Investment Management:** Investment Management will provide functionality to record investments and track receipts against the same.
- **Loan & Guarantee Management:** Loan & Guarantee Management functionality will support Finance Department in managing exposure towards loans and guarantees issued by state governments. It will assist in payments and recoveries as well as recording of any change in terms and conditions.

3.6.1 Debt Management

GoMP typically raises debt through three sources - Open Market Borrowings, Institutional Loans like NABARD, LIC, GIC and loans from Government of India including Externally Aided Project (EAP) loans. Debt Management module will create a comprehensive repository of these receipts and corresponding interest payments and principal repayments for effective tracking and accounting as per relevant heads of account. It will also allow maintenance of

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changing terms and conditions for these receipts. The envisaged system should also allow linking of loan tranches to expenditure.

The workflow of debt raised by the state is illustrated below –

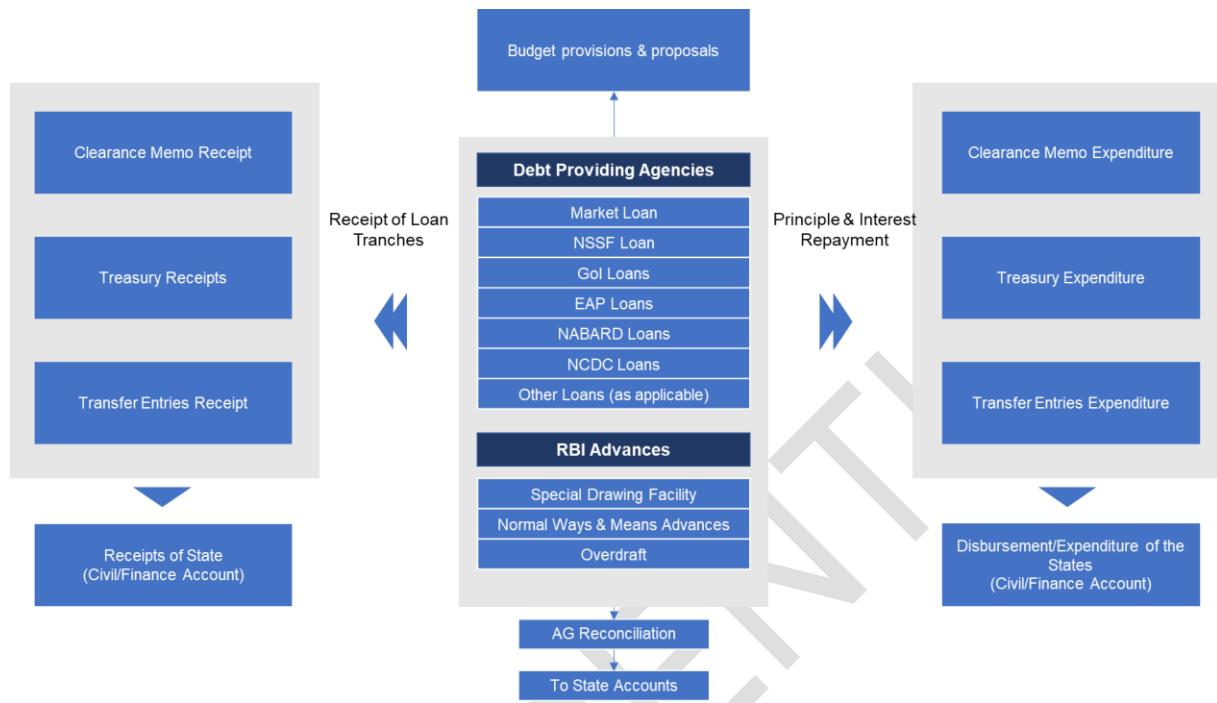


Figure 11: Workflow for debt raised by the State

The functionalities of the module are mentioned below –

3.6.1.1 NABARD Loans

1. NABARD Loan Approval

- i. The system should allow departments to raise request for NABARD loans. The department users will be able to enter the loan requirements in the system and receive approval from Head of Department or concerned approving authority in the Administrative Department.
- ii. The system should allow the department user to update and attach relevant details and documents like Detailed Project Report (DPR), Administrative Approval, Technical Sanction etc. to demonstrate necessity of NABARD loan.
- iii. When the Head of Department or any other approval authority approves the loan, the system should move it to Finance Department NABARD user
- iv. The system should allow NABARD User in Finance Department to verify sufficiency of proofs and necessity of NABARD loan.
- v. The system should allow uploading of minutes of the High Power Committee (HPC) meetings and recommendation letter sent to NABARD

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- vi. The system should provide decision support tools like reports on past and ongoing loans and present a summarized view of the loan request to enable the NABARD user of Finance Department to act on the request.
- vii. The system should allow NABARD user of Finance Department to receive approval on NABARD loan from designated authority in Finance Department
- viii. After approval from designated authority, the NABARD user should be able to generate NABARD loan request letter from the system
- ix. The system should have integration with NABARD for dispatching loan requests.
- x. Upon receiving the request, NABARD will use their internal systems and processes for approving the loan

2. NABARD Sanction

- i. System should provide login access to designated NABARD authority in IFMIS Next Gen.
- ii. System should provide NABARD authority the functionality to update loan details like Project Implement Code (PIC), interest rate, repayment schedule etc.
- iii. After NABARD authority submits the details in system, it will move to Finance Department user.
- iv. The Finance Department User should be able to accept or reject the loan details.
- v. If the Finance Department user rejects the loan, NABARD will update the details and reupload on to the system.
- vi. After Finance Department user accepts the loan, it will be added to the NABARD loan tranche of that year and a repayment schedule will be created in the system.

3. NABARD Loan Reimbursement

- i. System should allow user to apply for Mobilization advance along with updating adjustment process
- ii. System should allow user to generate Statement of Expenditure (SoE) containing details like cost of work, amount availed, claim raised – settled or not settled, expected cost in current month etc. to claim reimbursement from NABARD
- iii. Claim should be raised through the system and details will be sent directly for reimbursement by the Department. Intimation will be sent to FD screen.
- iv. The system should consolidate SoE at project level and send it to NABARD through interface.
- v. NABARD may provide full or partial approval on the reimbursement request.
- vi. System should capture such full or partial approval in the confirmation letter received from NABARD.

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4. NABARD Loan Receipt

- i. System should allow user to submit drawal application in prescribed format to NABARD containing details of physical and financial progress
- ii. NABARD will verify the details and disburse the eligible amount. System should capture the details of amount disbursed through challan, cheque or electronic transfer and reconcile same with RBI clearance memo.
- iii. System should be able to receive prescribed format of Time Promissory Note (TPN) from NABARD.
- iv. System should be able to digitally sign and respond to NABARD on TPN through IFMIS Next Gen.
- v. System should provide the Finance Department user facility to map receipts from NABARD for the tranche to different reimbursement claims and projects in that tranche by using TPN details.

5. NABARD Loan Repayment

- i. System should generate alerts prior to repayment date, as per a pre-defined time period. The system should allow authorized users to configure such intervals.
- ii. System will also generate periodic MIS for NABARD repayments.
- iii. System should also have provision to digitally capture demand letter shared by NABARD for the instalments dues.
- iv. System should flag any difference in demand note and system generated alerts.
- v. System should have provision to auto-populate payment type i.e., whether interest payment or principal repayment is due, based on repayment schedule. System user should be able to change interest and payment amount for every repayment including premium received from NABARD as a result of repayment made by the State before the due date.
- vi. System should be able to generate report on yearly accumulated difference between repayment due records maintained by Finance Department and those maintained by NABARD.
- vii. System should record all the interest payments and principal repayments against the projects and tranche details
- viii. System should provide a functionality to check availability of budget and create requisition of repayment based on demand note and the alerts for appropriate amount and repayment type.
- ix. The repayment requisition will be routed to designated authorities in the Finance Department for seeking approval. Approval authorities will also have provision to make changes to the repayment details.

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- x. After repayment requisition receives all the required approvals, system will provide user functionality to create bill and submit to treasury for payment to NABARD.

6. NABARD Loan Maintenance

- i. System should provide the option to authorized users to change details like debt servicing schedule, interest rate etc. of NABARD loans.
- ii. System should have workflow for receiving approval from designated authorities when any such changes are made.
- iii. System should have functionality & appropriate integrations to capture supporting details and documents for any such modifications.
- iv. System should maintain a detailed audit trail of such changes.

The envisaged system should enable a similar process for managing GoMP's debt from LIC, GIC, if any in the future.

3.6.1.2 Market and Institutional Borrowings

While NABARD loans and institutional borrowings like LIC, GIC receipts and repayment is done through Treasury, Market loans and other borrowings including NSSF, EAP and Gol are managed by RBI on behalf of the state. System should be able to track the receipts and repayments on such loans though use of RBI Clearance Memo.

1. Market Loans

Market Loans are availed under Open Market Borrowings from commercial lenders like banks and commercial financial institutions. RBI conducts auction of commercial loans as the banker for State Governments. It also handles the receipts, interest payments and principal repayment of the loans.

- i. System should provide functionality to user for creating a borrowing schedule in the system.
- ii. System should allow user to generate notification for raising market loan in IFMIS Next Gen by capturing fields like notified amount, green shoe option, tenure, date of repayment etc.
- iii. System should allow user to create a press communiqué in IFMIS Next Gen based on the notification.
- iv. Based on the notification, credit institutions will submit their bids to RBI. RBI selects cut-off interest rate and successful bidders along with the amount offered. RBI receives the amount in Consolidated Fund of the state and shares the details in the clearance memo.
- v. System should allow user to create record of new market loans when RBI selects the lender and update details on interest rate, repayment, etc.

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- vi. System should allow user to edit record in case of reissuance of market loans when RBI selects the lender and update details on interest rate, repayment, tranche etc.
- vii. System should allow receipt of RBI Clearance Memo digitally and segregate market loan receipts
- viii. System should provide authorized users the provision for modifying loan details with appropriate approval mechanism. Audit trail for all such modifications should be maintained in the system.
- ix. System should allow capturing of details of repayment done by RBI through clearance memo and mapping it to appropriate head of account
- x. The system should generate repayment alerts for specified periods based on loan details entered in the system.
- xi. System should also provide approval and updating on workflow in case of loan consolidation, loan prepayment, loan write-off etc. System should allow finance department user to generate press communique for announcing the principal repayment of SDLs one month before the date of maturity or otherwise as finalized by CTA/ FD.

2. Institutional Borrowings

Finance Department floats loan requirements to Financial Institutions (e.g. LIC, GIC, etc. seeking their lending terms and conditions. Finance Department evaluates the terms and selects financial institution for the borrowing.

- i. System should provide user functionality to update sanction, tenure, repayment schedule, interest rates and other details for institutional borrowings.
- ii. System should issue treasury challan to the lender through which they can disburse the loan to the state.
- iii. System should capture the receipt in the debt module when receipt is done through challan.
- iv. System should generate periodical alert on each loan account when repayment is due.
- v. System should also capture demand note from financial institution for the repayment.
- vi. In case there is a discrepancy between system repayment alert and demand note, system will flag it to the user. System must allow user to modify repayment amount for both interest and principal.
- vii. System should have a workflow for necessary approvals for the loan.
- viii. System should allow user to create bill once approval is received and submit it to treasury for repayment of loan.

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3.6.1.3 Transfers from Government of India

This sub module should provide markers against the Budget line to depict source of funding - GoI loans/ EAP and others as applicable. The provision for approval of all the financing agreements should be facilitated using e-sign and DSC.

1. External Aided Projects

a. EAP Reimbursement Claim Processing

- i. System should allow user to capture the approval of project by external agency along with necessary documentation like loan agreement, project agreement etc.
- ii. System should provide functionality to the user to capture loan details and terms and conditions
- iii. System should provide functionality to the user to view individual project office wise expenditure against each of the expenditure category/ Object Head
- iv. System should provide functionality to the user to modify the expenditure category of any voucher level entry and regenerate the category wise expenditure
- v. System should provide functionality to the user to generate the statement of expenditure from the consolidated category wise expenditure
- vi. System should provide functionality to the user for generating reimbursement claim by applying specific % on the eligible expenditure against each of the expenditure category based on terms of the loan
- vii. System should provide functionality to the user to generate/submit the claim to CAAA
- viii. System should capture status of claims payment either by downloading from CAAA website or through CAAA integration

b. EAP Grant Receipt

- i. System should capture EAP grant receipts from RBI Clearance Memo on EAP Grant receipts
- ii. System should allow user to map EAP grant to corresponding EAP project
- iii. System should have details of total grants received in both Indian Rupees and foreign currencies
- iv. System should update the state account upon receipt of the grants

c. EAP Loan Receipt

- i. System should capture EAP loan receipts from RBI Clearance Memo
- ii. System should allow user to map EAP loan to EAP projects in IFMIS Next Gen
- iii. System should provide functionality to finance department user to receive approval on the receipt entry
- iv. System should update the state account when approval is received

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- d. EAP Loan Repayment
 - i. System should generate repayment alert at a predetermined period before repayment date
 - ii. System should capture EAP loan repayment from RBI Clearance Memo
 - iii. System should allow user to map EAP loan repayment to EAP loan and EAP project, make modification to the repayment details in case of discrepancies and identify payment as principal and interest payment
 - iv. System should provide functionality to finance department user to receive approval on the repayment entry
 - v. System should update the state account when approval is received

Similar functionalities should be available in case of PPP projects.

2. Gol Grant

- i. System should capture Gol grant receipts from RBI Clearance Memo
- ii. System should allow user to map grants to schemes and budget
- iii. System will automatically update the state account upon receipt of the grants

3. Gol Loan

a) Gol Loan Receipt

- i. System should capture Gol Loan receipts from RBI Clearance Memo
- ii. System should allow user to create Gol Loan against clearance memo and enter details on terms, tenure, rate of interest etc.
- iii. System should provide functionality to Finance Department user to receive approval on the Gol Loan entry done
- iv. System should update the state account when approval is received

b) Gol Loan Repayment

- i. System should generate repayment alert at a predetermined period before repayment date for AG User
- ii. System should provide functionality to AG user to send alert to finance department user on loan repayment for concurrence
- iii. System should provide functionality to finance department user to generate interest payment and principal repayment details
- iv. System should provide functionality to finance department user to verify payable details and submit for approval
- v. System should provide functionality to finance department user to receive approval on the repayment details
- vi. System should provide functionality to finance department user to generate repayment advice and forward it to AGMP user
- vii. AGMP should forward repayment request to RBI
- viii. System should capture Gol loan repayment from RBI Clearance Memo

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- ix. System should allow user to map Gol loan repayment to Gol loan, make modification to the repayment details in case of discrepancy and identify payment as principal and interest payment
- x. System should update the state account when payment is made

3. NSSF Loans

National Small Saving Fund (NSSF) is the public account of Central Government where investor invests money in various small savings schemes of Government of India. NSSF funds are invested in special securities issued by state as the internal debt.

- i. AG user should be able to capture sanction issued by Government of India and update loan details like tenure, repayment schedule, moratorium period, interest rate, etc for each loan and forward the details to Finance Department which should subsequently get captured in Debt module.
- ii. Once RBI credits the Consolidated Fund of the State, system should be able to capture receipt details from RBI Clearance Memo.
- iii. System should also be able to capture details of repayment done by RBI on NSSF loans for both principal and interest payments through RBI clearance memo.

3.6.1.4 Debt Maintenance

System should provide workflow to the user to capture any changes in terms and conditions of the loans. Some of the activities are mentioned below

- Change in tenure
- Change in interest rate
- Loan consolidation
- Loan prepayment
- Loan write-off
- Conversion of debt to equity

3.6.1.5 Debt Sustainability Analysis

The envisaged system would provide inputs required for the preparation of the Medium Term Debt Strategy (MTDS) and the Debt Sustainability Analysis (DSA) report for GoMP. Key parameters including ratios, indicators and trends can be generated through MIS reports and dashboards.

- MTDS: The MTDS framework will enable the officials to view different debt scenarios based the variation in the baseline indicators related to debt. This should be reviewed annually for its impact on the fiscal and economic health and debt sustainability of GoMP.
- DSA: IFMIS Next Gen should provide analytical tools, scenario modelling tools and dashboards to facilitate debt sustainability analysis on a periodic and real-time basis. With the availability of information on the future revenue projections in the proposed

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system, the sustainability analysis would indicate if the present debt situation could be serviced through revenues without major repercussions on the productivity and solvency of the government.

3.6.2 Investment Management

Government can make investments on securities or equities in State Corporations. The functionality will support Finance Department in recording, purchasing and selling such investments.

3.6.2.1 Investment Sale and Rediscounting

1. System should allow concerned department user to select the investment for sale or rediscounting.
2. System should allow user to receive necessary approval from designated authority or Finance Department in the system.
3. System should allow user to send intimation to RBI¹ for sale or rediscounting of the investment.
4. System should allow user to capture sale proceeds from RBI clearance memo and update the investment records accordingly.
5. System should track and update all the budget heads involved in above transactions.

3.6.2.2 Fund Investment

State operates funds like Guarantee Redemption Fund (GRF), Consolidated Sinking Fund (CSF) etc. which are maintained in the public accounts of the state. The following functionalities should be enabled in IFMIS Next Gen with respect to these investments –

1. System should capture receipt of contribution in the funds and will send intimation to Finance Department user for investment of balance amount in GRF and CSF.
2. System should assist finance department user to input the amount of the fund that has to be invested and seek necessary approval from the designated authority in the system itself.
3. System should allow finance department user to send intimation to RBI digitally after approval is received on the amount to be invested along with other relevant details
4. System should capture the investment advice provided by RBI after it has made the investment of the amount
5. System should also capture the amount debited from the fund available in RBI Clearance Memo and update it in IFMIS Next Gen
6. System should capture the interest income accrued from the investments
7. System will allow finance department user to credit the fund with investment income generated from it
8. System should also intimate and allow finance department user to reinvest the investment in the fund

¹<https://m.rbi.org.in/scripts/PublicationsView.aspx?id=18086>

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9. System should automatically track and update all the budget heads involved in above transactions.
10. System should generate reports for finance department to monitor investments made by RBI in GRF and CSF, and any other funds as applicable

3.6.2.3 Treasury Bills (T-Bills) & Government Securities (G-Sec) Investment

In addition to the fund investment, state government may also choose to invest excess cash or other available cash in treasury bills and government securities².

1. System should assist finance department user in designating the amount that has to be invested and seek necessary approval in the system itself.
2. System should allow finance department user to send intimation to RBI digitally after approval is received on the amount to be invested along with other relevant details
3. System should capture the amount debited from the fund available in RBI Clearance Memo and update it in IFMIS Next Gen
4. System should capture the investment made in treasury bills and government securities in RBI Clearance Memo upload functionality and reflect it in the T-Bill/G-Sec records
5. In case of government securities, system should also capture investment advice containing security details which is sent by RBI
6. When investment achieves maturity, the system will capture the investment income earned and deposited in state account from the RBI clearance memo and update it at T-Bill/G-Sec records
7. System should automatically track and update all the budget heads involved in above transactions.

3.6.2.4 Institutional Investment

State government invests in equity of state corporations as well as undertakes institutional investments. System should manage such investments along with creating a comprehensive repository.

1. System should provide functionality to concerned department user for capturing the details of proposed investment
2. System should capture budget head details in case of book adjustment for investment
3. System should allow user to capture multiple budget head details for investment
4. System should allow user to select appropriate loan head if investment is done through loan
5. Upon finalization of details on investment, system should allow user to seek approval from designated authority

² RBI, as banker to the Government, manages the surplus funds of the State. It automatically invests surplus funds (above the required minimum daily cash balance) of the State in 14 Day Intermediate Treasury Bills (ITBs) and rediscounts thereof in case of shortfall in the prescribed minimum cash balance. The State can also advise RBI to participate in treasury bill auctions as non-competitive bidders for investment of their surplus funds.

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6. Upon receiving approval, system should allow user to send the equity proposal to finance department
7. After approval, system should allow user to make the investment by creating bill and sending to expenditure module
8. System should generate unique institution and investment id for the investment
9. System should capture any dividend or other income earned from such investments
10. System will automatically track and update all the budget heads involved in above transactions.

3.6.3 Loan & Guarantee Management

State government also provides loans and guarantees to corporations and individuals (Educational Loan). The state government earns interest and guarantee fee income on them. In IFMIS Next Gen, the system should allow management and recording of these loans and guarantees.

In terms of loans given by GoMP, the system should have provision for finance department to choose the concerned line department (through which loan is sought), the scheme (through which loan is disbursed) and enter the amount to be disbursed against the sanction. Thereafter, system should allow forwarding the request to ACS, Finance for approval. Subsequently, system should allow forwarding the approval to the concerned line department for drawal and creation of Loan Account against the same. Apart from this, the System should also allow linking of schemes and projects to the source of revenue (loans/borrowings/etc.)

The department should define mechanism to capture value of loans taken against the Guarantees provided by the state by providing necessary inputs methods in IFMIS Next Gen. The system should be integrated with banks where loan accounts are held by the respective institutions. This purpose of this integration will be to have visibility of loan receipts for institutions, where State is the guarantor.

The lifecycle of loans provided by State government and its subsequent accounting is illustrated in the figure below –

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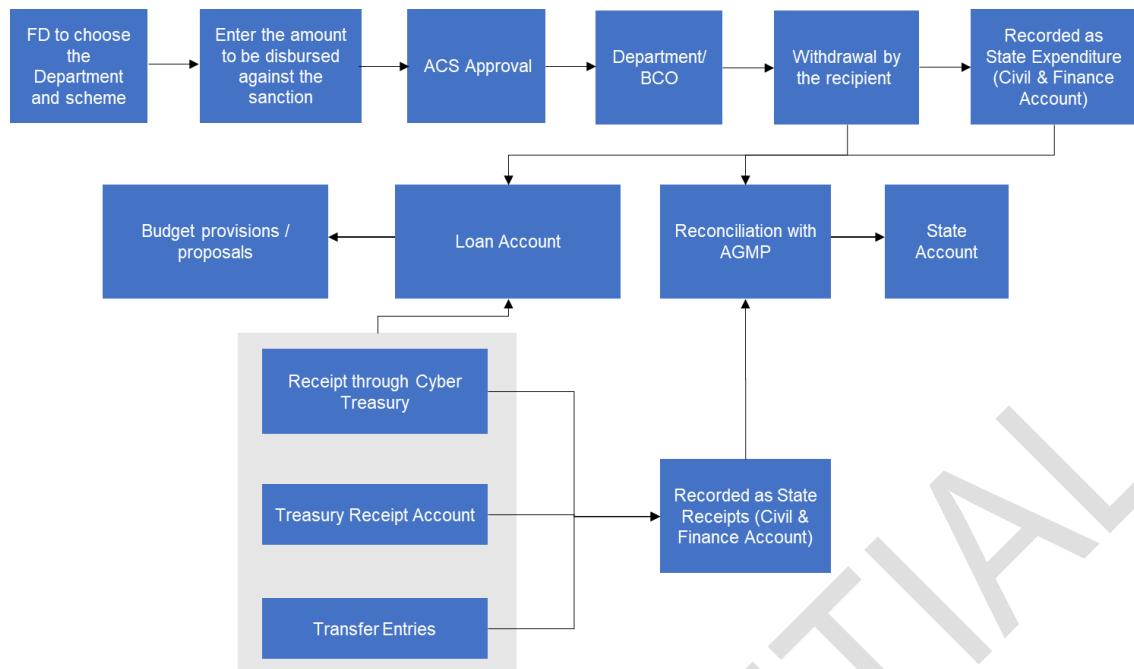


Figure 12: Workflow of accounting for loans given by GoMP

3.6.3.1 Guarantee maintenance

Guarantee maintenance should allow the users to seek approval on guarantees by Finance Department as well as maintenance of unified records

1. System should provide administrative department user the functionality to raise a request on guarantees for their affiliated corporations from the Head of Department
2. System should capture necessary details about financial health, loan history and purpose for which the guarantee is being sought
3. System should provide administrative department user functionality to maintain register of all guarantees issued
4. After the department user receives approval, system will forward the request to Finance Department for approval along with necessary documents including guarantees already issued
5. System should provide functionality to finance department user to receive guarantee request to review the same
6. Upon receiving approval on hard copy from Cabinet, system should provide functionality to finance department user to approve the guarantee and generate the guarantee order
7. Thereafter, system should generate the draft guarantee deed for the administrative department. The SI shall configure all such templates in the system.
8. System should provide functionality to administrative department user to send draft guarantee deed to finance department
9. System should provide functionality to finance department user to provide consent on the issuance of guarantee
10. System should also generate challan for payment of guarantee fee by the department
11. System should capture the challan and its status once the payment is received from the corporation

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12. System should provide functionality to administrative department user to finalise the guarantee deed for sharing the same with the corporation along with guarantee order
13. System should allow concerned department to enter loan and financial institution detail once loan is availed against guarantee
14. System should provide functionality to administrative department user to upload the loan document and guarantee deed.
15. System should have provision to seek concurrence of finance department in order to make modifications in guarantee terms and conditions, and extension of guarantee.
16. System should have provision to make changes in guarantee terms and conditions after seeking necessary approval within the system from finance department
17. System should also have a separate workflow to record details of guarantees given by state governments against education loans
18. System should automatically track and update all the budget heads involved in above transactions.
19. Upon successful issuance of a guarantee, the system should allow updation of the contingent liabilities of the state.
20. Upon revocation or expiry of the guarantee, the system should update the guarantee records and reduce the contingent liabilities accordingly.
21. Similar functionalities should be available in case of annuity projects for which GoMP issues guarantees.

3.6.3.2 Repayments and recoveries of guaranteed loans

In case borrowing institution defaults on repayment of the loan (against which guarantee was issued), lending institution (bank) will intimate the concerned department and finance department and request for payment by state government to the extent of default by the borrowing institution based on the terms and conditions of the guarantee.

1. Administrative Department should have an option to upload default notice and supporting documents and forward the same to FD, requesting default payment
2. After approval is received, system should have provision for creation of bill for default payment by finance department or concerned department.
3. System should submit the bill to expenditure module for payment to bank
4. System should map the payment against the Guarantee ID which will subsequently also update the State Contingent Liability.
5. As soon as the payment is made, system should convert the guarantee to loan given by state government to administrative department
6. Administrative department should recover the amount from borrowing corporation and update it in the system
7. If the corporation fails to pay the recoveries, the system should reflect the amount in administrative department's budget as loan given to the corporation
8. In case of higher education loan, system should allow recovery through administrative department from borrower student through challan.
9. System should have provision for write off in case recovery cannot be made

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3.6.3.3 Maintenance of Loans and advances by state

State government may provide loans in the form of advance by Administrative Department to state organizations based on proposal received. The following functionalities should be enabled in IFMIS Next Gen.

1. Loan Disbursement by Administrative Department to state organizations after consent and approval from Finance Department
 - a. System should provide functionality to administrative department user to create a proposal in the system along with uploading of necessary documents for a loan request
 - b. System should forward approval request to finance department user after administrative department approval is received
 - c. System should provide finance department user functionality to verify proposal and documents submitted by administrative department
 - d. System should also provide details on to user on default history, past performance etc.
 - e. System should provide functionality to finance department user to receive approval on the proposal from designated authorities in finance department
 - f. System should generate sanction once approval is received from all authorities
 - g. System should provide functionality to concerned department and finance department user for creation of loan disbursement bill and submission to expenditure module
 - h. System should update the payment status in module once payment is made
 - i. System should have the provision for finance department to endorse sanction order forwarded to FD by the administrative department before issuing to concerned organization
 - j. The envisaged system should have institution-wise subsidiary loan register which contains complete details of loan condition as well as opening balance, additional disbursement, recovery, interest charged and closing balance of loan amount. AG should have facility to view these registers.
2. Loan recoveries through Book Adjustment
 - a. System should provide functionality to concerned department user to receive approval from finance department
 - b. System should provide functionality to concerned department and finance department users for creation of loan recovery schedule
 - c. System should create appropriate accounting entries in head of accounts for loan account
 - d. System should allow the facility for recovery of loan by way of book adjustment, i.e, the loan will be created by debiting the expenditure head and crediting the loan recoveries account through book adjustment process/ write off

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Recovery of loans and advances

1. System will generate periodic alerts for receivables from loans given by state government based on the terms and conditions of the loan
2. System will intimate concerned department and finance department user once the borrowing institution makes payment of interest and principal against the loan details
3. Such payments will be recorded through the receipts module.

3.7 Expenditure Management

The key users for this module will include Treasuries, DDOs, Banks, RBI's e-kuber, Beneficiaries, Vendors, External agencies, AG office for charging the interest entry, recovery of loans and inter-state adjustment entry, etc.

Given below are the key functional blocks of process and functionalities that will drive the Expenditure Management Module –



Figure 13: Expenditure Management

Vendor Portal

A vendor portal should be enabled in IFMIS Next Gen for vendors to complete their profiles, submit necessary details for onboarding, submit invoices/ claims and route the claim request to appropriate competent authority. The module will also cater to management of vendor data in the system. This would also include functionalities such as vendor registration, profile maintenance and master data maintenance.

Disbursement Management

The Expenditure module should provide the functionality to handle processing of different kinds of expenditures of the State. Claims specific to employees and vendors, claims initiated by different government departments and claims raised by divisions of work/forest departments viz. like Works Departments. will be processed through the Disbursement Management functionality. The module would primarily consist of following key processes –

- Invoice submission by vendor through vendor portal
- Submission/ generation of claims
- Claim processing and sanction order generation
- Bill creation
- Bill processing and approval by Treasuries
- Payment processing by treasury officer
- Fund disbursement by Banks/ e-kuber and payment reconciliation

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- Self-drawing DDO bill processing
- Payment by cheque
- Cheque reprocessing
- Utilization certificate management
- Centralized bill processing centre: bill review, processing and cancellation (as and when notified by the state)
- Off-budget receipts & payment processing
- By - transfers

The key users for the respective modules will be as follows –

Module Name	Key Users Involved
Vendor Portal	<ul style="list-style-type: none"> • DDO • Vendor (Individual/ Agency)
Disbursement Management	<ul style="list-style-type: none"> • Treasury Officer (TO) • Self-Drawing DDO (Works Department) • Deposit Administrators • Departmental DDO (Civil/ Non-Works Department) • Payment Processing Official – Treasury • Bank Official • RBI (e-Kuber)/ AEPS
Receipt Management	<ul style="list-style-type: none"> • Citizens • Businesses, Government / non - government institutions • Loan Borrowing Department/ Organization/ Agency (Government) • Treasury Officer • Bank Official • RBI • CGA (PFMS)

Table 7: Key Users

3.7.1 Vendor Portal & Centralized Vendor Management

The vendor portal will be used to manage onboarding of, and payments to vendors on IFMIS Next Gen. The key components of vendor portal are listed below. The vendor portal may be used by the Departments for accepting vendor claims and invoices.



Figure 14: Vendor Portal and Centralized Vendor Management

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3.7.1.1 Vendor Registration

1. The envisaged system should allow maintenance of global vendor categories – Supplier Firms, Societies, NGOs, Beneficiaries (Citizens, Nominee, etc.), others as defined in consultation with CTA.
2. DDOs or any other Authorized user will have functionality to raise a vendor creation request from the IFMIS portal. The request will be sent to the Vendor for profile completion. The system should also block the budget against the claim raised by the vendor.
3. Once the profile is complete and submitted by the Vendor, the request will be routed to the Competent Authority for approval
4. The envisaged portal will provide a vendor creation request form with pre-defined parameters
5. Authorized Users will fill in the basic details of a Vendor including their authorized signatory and their correspondence details (mobile number and e-mail ID).
6. Upon submission of the correspondence details, a mail will be triggered to the vendor for profile completion.
7. Vendors will fill the required details in the system including identification details. The SI shall finalize these fields in consultation with CTA. These details, at an indicative level will include the following –
 - a. Name of the vendor
 - b. Name of the authorized signatory
 - c. Address (with PIN Code)
 - d. Mobile Number
 - e. E-mail ID
 - f. Aadhar Number
 - g. PAN
 - h. GSTIN
 - i. Bank Account Number
 - j. IFS Code
 - k. Country
 - l. State
 - m. Division
 - n. District
 - o. Tehsil / Block
 - p. City / Village
 - q. TAN
 - r. Any other detail required by CTA
8. Vendor will input details of a valid Govt. ID as finalized in consultation with CTA
9. The system should provide facility for verification of account holder name based on bank account number and IFSC.
10. The envisaged system should ensure maintenance of unique records/ masters for vendors by enabling validations through GSTIN and/or PAN or any other unique

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ID as finalized in consultation with CTA. For this purpose, system will be integrated with following data sources –

- a. NSDL: For PAN verification/validation of vendors. This will be applicable for both Agency and Individual.
 - b. GSTN: For verification/validation of GST Number.
 - c. UIDAI: For verification/validation of Aadhar Number
 - d. System will validate and ensure no duplicate entries are created
 - e. The SI shall finalize the requirements for validations against external data sources in consultation with CTA.
11. Through integrations with external data sources, details such as vendor name, address, authorized personnel etc. may be auto populated. The SI shall finalize these fields in consultation with CTA.
 12. Users will fill additional details viz. vendor details, type of business etc.
 13. Upon submission of the form by the vendor, the details should be sent for verification to the Competent Authority within the Department.
 14. The system should also allow the Department to map Work ID (s) or Contract ID with specific vendor(s) as applicable. Work IDs should be captured through integration with Works Management System. Alternately, the system should allow Departments to create a contract in the system mapped to the appropriate sanction. The system should allow the Departments to upload the contract, specify payment milestones (if any) and map the vendor(s) to the specific contracts as applicable.
 15. Once validation/verification is complete, vendor registration will be complete
 16. System should trigger an email with login details to the vendors
 17. The verification status should be shared with the vendor periodically
 18. The system should generate a unique Vendor ID upon successful registration.
 19. The vendor would now be able to submit invoices against a contract, work or others (as applicable) through the vendor portal
 20. The envisaged system should also be equipped with features such as risk profiling of vendor based on their records, inputs from departments etc. The SI shall finalize this algorithm in consultation with CTA.
 21. The system should also have a validation to de-duplicate the vendor database with employee database (as captured from e-HRMIS) to ensure that any employee does not get registered as a vendor.
 22. The envisaged system should also allow the authorized user from the Department to create a vendor profile on behalf of suppliers, as an exceptional case. This facility should only be made available based on approval from the Competent Authority. This facility should only be allowed for specific vendor categories such as daily wage workers and others. In such a case the vendor profile completion should only be considered complete, after submission of the OTP sent to the vendor's mobile.
 23. The system should also allow bulk upload of the list of beneficiaries either from the legacy system(s) or the Department(s). The SI shall finalize the format for the same in consultation with CTA or its nominated agencies.
 24. There should be provision for Aadhar bulk lookup services
 25. System should provide self-registration facility for vendors.

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26. System should provide following categorization of vendors.

- i. Personal
- ii. Commercial
- iii. Institutional
- iv. Small Business Finance
- v. Small Scale Industries
- vi. NGOs
- vii. Government official
- viii. Departmental official
- xi. Stamp Vendors
- x. Service Providers

There may be further sub-categorization of vendors which will be decided in consultation with CTA.

26. Data may also be received through integration from following systems for verification of vendors during registration.

- i. GSTN
- ii. NSDL
- iii. Samagra
- iv. Aadhaar
- v. Local Government Directory (LGD)
- vi. NPCI
- vii. EPF / ESI
- viii. RBI / e-Kuber / SBI / Agency banks
- ix. PFMS
- x. All state & central government portals
- xi. All portals developed by MPSeDC
- xii. GeM

3.7.1.2 Profile Maintenance

1. Vendors can access their profiles through the vendor portal and make edits to their profile. These requests will be submitted to the authorized users for their approval.
2. System will enable the authorized user to review and approve/reject any edits/updation to vendor details submitted by the vendors through their interface
3. System will have provision to authorized officials to tag any vendor as "Blacklisted" for any specific Dept/Directorate/Government Agency as per the relevant rules and due process. This status should act as an inputs to the overall risk profile of the vendor.
4. System should have the provision to verify vendors' account details through integration with NPCI on a periodic basis as finalized in consultation with CTA.
5. An audit trail for all changes to the vendor records should be maintained. This audit trail should be tamper proof.
6. Any changes of bank account number for a vendor should reflect as addition of new account and not change / swap of account number. The trail of old account

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- details should be maintained. The old account numbers should be marked as inactive, if desired by the vendor.
7. The vendor should be provided with facility to operate with multiple account numbers at the same time. The vendor should be allowed to use a particular bank account to be associated with payments from a particular department.
 8. Historical payment data regarding a particular vendor for which the payments are being made should be visible to DDO / TO, account wise and DDO wise.

3.7.1.3 Vendor Claims

1. The vendor should be provided with a user login to the vendor portal to view and raise claims and also track status of their claims and raise grievances.
2. The vendor portal would function as a centralized interface that would route invoices/claims to the appropriate Department/Govt. Agency (DDO).
3. Vendors will access the claim form and will submit the invoice claims that would get routed to the respective Department. If applicable, vendors will select the project/contract/work ID and milestone against which the claim is being raised.
4. System would provide provision to the users to upload supporting attachments/documents
5. In the department selection list, there would be provision for vendor to select the Department and the Contract for which the claim is to be raised, if there are multiple work orders
6. Once invoice/claim request is accepted the vendor would receive a SMS/email notification
7. The system would maintain audit trail of a bill lifecycle starting from invoice submission till payment processing
8. The system should display the status of payments in the vendor portal. Any change in status should be notified to the vendor.
9. The DDO can access the claims and invoices received from the vendor and can raise/create a bill against that
10. The claim would be used to generate a pre-filled bill and presented to the DDO for finalization and submission to the Treasury.

3.7.1.4 Integration of Resource Outsourcing Management System (OMS)

The CTA office is currently developing a Resource Outsourcing Management System, although this is being developed outside IFMIS Next Gen. As per the Finance Department's Outsourcing Circular dated 31.03.2023, it is mandatory to ensure the following for outsourcing:

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- Flagged posts
- Regular payments
- Necessary deductions

1. The envisaged system shall provide API-based integration with the OMS system.
2. Vendor shall submit the claim from OMS system to IFMIS Next Gen along with employee/manpower details.
3. The claim will be mapped to the budget availability for outsourced employees.
4. The envisaged system shall retrieve the strength of outsourced employees and their HRMS access rights.

3.7.2 Bill Management System

The disbursement functionality will allow generation and process of bills. The envisaged system should allow generation of bills against approved claims. These claims may be generated from within IFMIS Next Gen or external systems such as e-HRMIS etc. The envisaged system should also allow generation of a common bill. The key processes are depicted below.



Figure 15: Bill Management System

3.7.2.1 Claims Processing

In the envisaged IFMIS Next Gen, claims raised in other modules by employees, or DDOs should be available for bill creation. The DDOs will access these claims and raise bills against the same. The envisaged system should also enable generation of a draft bill from these claims, which will be reviewed by the DDO and submitted. The following modules would be possible sources of raising claims by the employees or DDOs.

- e-HRMIS or any other mechanism notified by the GAD
- Pension Management
- Deposits
- Department Portals
- Vendor Portal
- Others

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The above list is indicative and shall be finalized in consultation with CTA. The key functionalities are listed below –

1. System will have the provision to capture claims generated from different modules/systems as described above.
2. All requests raised by vendors would get routed by the system to the appropriate DDOs or other authorized users. The receiving officer/DDO would have provision to view all such vendor requests on separate dashboard or request pool.
3. In addition to that, DDOs will have the option to view worklist of pending or approved/sanctioned claims.
4. Invoices related to Receipt Head 0406 should be booked only by Treasuries as per relevant rules. In case of booking by Forest Division office, a work ID arrangement should be made to avoid double entry of Receipt heads. Provision to download the physical copy of the booked challans should be there in the envisaged system.
5. E-sign of the claimant and approver to be put on the claims

3.7.2.2 Bill Creation & Submission

1. All types of approved/sanctioned claims will be accessible in the dashboard/worklist of the DDO user. The DDO user(s) should be notified upon receipt of such claims.
2. Additionally, the envisaged system should also provide a common bill generation screen(through a common sanction order screen including for grant-in-aid utilization certificate) which should be generated by DDO users or other Authorized Officers for processing of bills not being generated through other workflows. Utilization certificates should be in single format for following cases – (i) UC generation for current bill, (ii) UC generation for past bill and (iii) UC generation for non-computerized bill.
3. The envisaged system should allow the DDO users to create a bill from the list of approved claims.
4. The DDO user will access these claims and raise bills against the same. The envisaged system should also enable generation of a draft bill from these claims, which will be reviewed by the DDO and submitted.
5. A common form for Bill Creation should be enabled in IFMIS Next Gen to streamline bill creation process, containing options for selection of different type of bills, option for multiple bill type selection and place holders for requisite attachments. All bills/vouchers/sub vouchers templates as per MPTC should be configured in the system. The system should also allow saving a draft of the bill. The system should highlight any bill totaling above INR 20,000. Such bills should compulsorily have facility to attach all sub-vouchers. Bills below INR 20,000 should have facility to upload list of sub-vouchers (in form of excel file).
6. The system should allow mapping of MPTC form with corresponding Budget Head.
7. System will generate a unique Bill Number on creating/submitting of bill details.
8. All supporting documents attached to a bill must be watermarked with the Bill Number.

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9. System will have provision to edit/update the “Head of Account” details on the claim form. All such edited bills will carry the remark that the HoA has been changed at the time of bill generation.
10. System would provide the DDO user /Bill Creator provision to update/feed bill with
 - a. Component Wise Break-up
 - b. State and Central share wise break-up
11. Further, at the time of generation of the bills, the envisaged system should allow the user to select a “purpose” value which describes the detailing of a HoA to simplify or making the process smooth. The list of values for “purpose” should ultimately be mapped to the corresponding HoA, which can be done through the system rules.
12. Provision to raise a bill against multiple detailed heads. System should allow generation of a unified bill for same bill type as per MPTC Vol. II or on the bill forms as decided by the competent authority.
13. DDO should have the option review the system generated bill priority before submission to Treasuries
14. The envisaged system should allow the DDO to either reject a bill or send back the to the bill creator for any correction required or approve and forward this bill to Treasury for processing it further for payments. A complete workflow for the DDO office users should be provided for this purpose.
15. System should prompt the DDO to certify that an original bill is being submitted.
16. System should also allow appending of digital signature or Aadhar e-sign to the bills.
17. Additional considerations to be given in the envisaged system design to accommodate following factors with respect to bill creation –
 - Regenerated bills against objected would get tagged/mapped against the original bill
 - Rectified bills will be treated as an extension of an existing bill with authenticated audit trail and budget updates.
 - List of bills in specific order to be made available.
 - List of available budget line should be provided at the time of bill creation
 - Edit option should be available for already paid vouchers to create arrear in Pay Roll.
 - The recovery done in Salary should get reflected in appropriate head, and the recovered amount should get reflected while making arrears
 - System will generate an arrear sheet of an employee for checking and approval of DDO. DDO can accept and generate the bill or can attach arrear sheet in case the amount as per DDO's calculation is different. DDO will have to attach a sanction order for payment of such arrear, confirming that no overpayment of pay or arrear has been done prior to withdrawal of this arrear and all the recoveries have been settled.
 - Approved amounts against a claim should be tracked. There may be a case where a bill is partially approved for payment based on the cash position of the

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- state. The system should issue periodic reminders to the TO and also generate reports depicting the pendency of such bills.
18. The envisaged system will provide templatized bill forms as finalized with CTA.
 19. The envisaged system should provide option to account for By-Transfers: AG and Treasury
 20. Minus adjustment entry facility for all the recovery / repayment of advances and refunds should be provided.
 21. In case of By-Transfers, nil bills should also be generated through the system wherein the entire amount is transferred to the receipt head directly. Nil Bill are the bills wherein entire expenditure amount is accounted as deduction/receipt i.e., Net Amount zero. e.g., Refund Bill of Government Contribution of NPS deductions. Processing of By-Transfer bills with Challan is same as that of Regular bills. Nil Bills should not undergo payment processing as no amount is to be paid to any beneficiary.
 22. The envisaged system should allow generation of a bill against multiple detailed heads, with one or multiple sanction IDs.
 23. The envisaged system should only allow for non-budgeted bill creation after seeking necessary approvals and sanctions. A report for all such bills and the non-budgeted value should be generated and reconciled with the Departments periodically. At the time of supplementary budget demands, such values should be auto populated.
 24. IFMIS Next Gen should also be integrated with other departments' systems for bill generation. In case of shortage in budget allocation against any budget line, system should notify the concerned DDO and BCO.
 25. In some of cases like Grant - in - Aid bills, bills are sent to Controlling Officer for counter signing.
 - a. These bills should be visible at Controlling officer's task list
 - b. System will provide the option to digitally sign the bill
 - c. The system should then route it back to the source DDO
 26. If the DDO finds the bill satisfactory, they will approve the bill at his/her level through Digital Signature. IFMIS Next Gen should facilitate this process.
 27. The system should limit the DDO against the withdrawal of payments.
 28. The envisaged system should allow endorsement of bills by the DDO to the Treasury for payments to non-governmental beneficiaries. This requires a separate DDO code mapped with treasury for making such payments, which is known as Local BTB in present IFMIS.
 29. For all the cases where multiple stakeholders / departmental stakeholders / portals / servers are involved, the system should provide facility for single bill creation based on multiple sanction orders (encrypted). Post bill processing and payment, system should respond with payment confirmation to the originating system.

3.7.2.3 Bill Prioritisation Channel

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1. The envisaged system should have a provision to auto-assign priority tag/level to bills basis pre-defined parameters. This would function as a pre-defined "Green Channel" for assigning priority to bills, to ensure critical bills are passed and processed on priority.
2. System would have pre-defined mapping of "Priority Level" viz. High, Medium, Low (Normal) based on key parameters such as types of bills, source, amount, HoA etc. The algorithm for assigning the priorities should be decided in consultation with CTA/FD. Requirement such as Capital grants, Social Security Schemes etc. can be valid inputs to the algorithm. SI shall devise the algorithm to compute the bill priority and will configure the same in IFMIS Next Gen. Any changes in the parameters or weightages should be managed through the rule interface defined in section 3.12.7.
3. All bills should be tagged with the system-assigned priority levels and would get routed to appropriate Treasury for further processing, approval and disbursement
4. Authorized users should also have the option to edit the priorities by assigning a valid reason for the same. SI shall fine tune the algorithm based on such inputs. The priority flag should be displayed against the bills in the Treasury user dashboard/worklist. Bills received by Treasuries should be sorted in order of their priority by default. The system should allow the user to change the sort order and/or apply filters parameters such as on Department, DDO, amount, data of receipt etc.
5. TO and other authorized users should be able to search bills using the Budget Line.

3.7.2.4 Bill Processing & Approval

1. The system should route the bills to the treasury and appropriate workflows should be configured.
2. The Treasury user should be able to verify or review/approve both.
3. System will trigger notification to the recipient once a new bill is received.
4. System will display of mismatch heads at the time of bill processing by DDO. In the envisaged IFMIS - lean review and approval chain would be maintained. This should be finalized in consultation with CTA.
5. The treasury users will verify Head of Account, Amount, Claim Details, Grant availability and supporting documents of the bills against the checklist configured in the system.
6. System will have provision for officials to access and view supporting documents and invoices/claims
7. The system should allow ready access to various attachments of the bill being reviewed. The entire bill including attachments like invoices should be visible as a consolidated document in a logical sequence. The complete history of the bill should be visible to the reviewer for informed decision making. The option to pre-download attachments in the background to save the effort of downloading the attachment separately by the Treasury user should also be provided. Also, the bill screen should display a preview of documents or bills in the side panel.
8. Post Review, the envisaged system should allow the Treasury user to review the bill and perform the following actions –

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- a. Objection of bill and update remark
- b. Approve for payments
9. On approval of bill payment, the system should generate e-cheque and voucher, according to sequence number and head.
10. All the objected bills will be sent back to the DDO for resubmission. The system should be equipped with a pre-defined checklist for errors and objections and the user should be prompted to select the relevant objection if a bill is rejected or sent back to the DDO.
11. The DDO can then update and correct the bill as per objection raised and route back to the Treasury.
12. In case of rejected bills, the budget lines should not be debited. Further, budget blocked against the bill should be released and any sanction order created should be delinked.
13. Upon re-submission, the envisaged system should be able to clearly show the changes to the bills with objections. Further, for bills with objections a complete trail and history of bills and the objection raised should be visible on the screen for quick access.
14. The system should flag sub vouchers as invalid for bill with objections
15. DDO details (Employee code, name and designation) should also be visible on the bills submitted.
16. On cancellation or rejection of a bill by the DDO, the grant amount equal to gross amount of cancelled bill will get released to the corresponding HoA, which can be utilized for creation of other bills
17. Additional functionalities that should be enabled in the system for ease of review and verification –
 - a. The bill forwarded from the Department will come in a format of digital file with supporting documents segregated as per their tags
 - b. User will have access to parallel double-window viewing pane for officials to scrutinize and verify bills with documents. TO should be able to view all relevant details such as MPTC bill, sanctions, vouchers, etc. in a structured manner on the screen.
 - c. User may not necessarily have to download documents to view a file. The file can be viewed in the system window itself
 - d. User may select multiple items/bills and view/approve at once.
 - e. Since sanctions are envisaged to be generated by the system, IFMIS Next-Gen should not allow generation of a bill without a sanction order
 - f. The bill screen should be enabled with tooltips with reference to various rules, description of a particular HoA etc. to reduce errors while raising bills
18. System should have a provision where document when accessed should be marked as read and approval should not be allowed unless all tabs are read. Such validations should be finalized and implemented in the system. Such functionalities should be mandated at certain user levels so that adequate verification of the bill is done. The SI should finalize this in consultation with CTA.

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19. Custom views and reports such as the provision to display list of bills under the same major head for multiple DDOs should be allowed in the envisaged system with the option to view the status of the bill.
20. There should be a provision to download the copy of certificates and challans in IFMIS Next Gen under Forest Receipt Head, Forest Remittance Head and Forest Advance Head.
21. The accounting of vouchers booked from Expenditure Head 2406 and 4406 should be done according to the Budget books and there should be provision to download the copy of the vouchers in the envisaged system.
22. The system should allow implementation of rules empowering passing of bills or changing of approvers based on the value of bills or other parameters. This option should only be available to authorized users.
23. The system should be designed to schedule regular expenses (like salary) to be auto debited
24. The system should also allow the following –
 - a. Suspense account mapping
 - b. Adjustment of recovery imposed on the vendor
25. The system should provide a facility to add a remark of at least 100 characters (or otherwise as finalized with CTA) in case of objected bills. The same should be verified / approved by a higher rank officer in the hierarchy.
26. In case of failed payments in one or more rows of a transaction, only IFSC of failed payment rows can be changed and refund can be processed. If account number is incorrect, then the only way possible is to flag that transaction. In such a case, budget will be credited back and fresh bills can be processed for making payments. All such refund bills for failed payments should be linked to the original bills to avoid duplication. The system should have validations to check if the new bill corresponding to failed payments and refund of the amount is not the same as a pre-existing bill. Also, at the time of raising a refund bill, the user should be prompted to provide the details of the original bill.
27. Transfer entry process is required in case of misclassification. In such scenarios, plus and minus of expenditure should be carried out.
28. If a treasury or a DDO approves abnormally high number of bills during a day / week / month, the system should generate an alert to the competent authority (HoD / HoAD / CTA).
29. A guard file of specimen signatures should be available in the system of all the Officers entitled to draw money through treasury or authorized to sign the sanction order or authorized to approve a payment. It includes the signatures of the officers of AGMP duly entitled by the Competent Authority to approve GPF final payments. System will display DDO wise signatures to the Treasury during passing of the Bills.

3.7.2.5 Payment Processing

1. The envisaged system should allow the Treasury user to generate a e-advice and/or e-file which will be shared with Banks/AEPS/e-Kuber for payment processing and disbursement. SI shall finalize the format of the same in consultation with CTA and

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relevant stakeholders. The e-advice and e-file should be shared by way of integration between the systems.

2. For payments through e-Kuber, a consolidated e-file across all Treasuries should be generated and uploaded to the SFTP server of e-Kuber. The mechanism of integration between IFMIS Next Gen and e-Kuber should be finalized in consultation with CTA and RBI. The system should validate and verify the e-file and would transfer it to e-Kuber.
3. The envisaged system should also allow the TO to update a future execution time and schedule the payment accordingly
4. Custom views and reports such as the provision to display list of bills under the same major head should be allowed in the envisaged system with a provision to view the status of the bill.
5. The status of payments should be updated on TO and DDO dashboards.
6. The envisaged system should allow the Treasury officer to select single/multiple bills and generate e-advice.
7. System should provide an option to generate encrypted payment e-file.
8. The Departmental DDOs, would have the provision to opt for AEPS payment for employees/individual vendors (other than agencies) – hence payment would be done from consolidated fund to recipient with Aadhar enabled bank accounts.
9. The system should also allow payments via e-RUPI vouchers which could be utilized in cases where a one-time payment needs to be done by the department to a vendor on behalf of an individual in making Direct Benefit Transfer. This would be implemented as per relevant rules.
10. The envisaged system should enable multiple payment mechanisms such as payment through banks, e-kuber, AEPS and others as finalized in consultation with CTA.
11. The envisaged system would be required to make Direct Benefit Transfer (DBT) to beneficiaries.

3.7.2.6 Reconciliation

1. The envisaged system should capture the payment acknowledgement from respective systems – e-Kuber, AEPS, Banks and update the transaction status in IFMIS Next Gen accordingly. The users should also be notified of the payment status.
2. Reserve Bank Deposit (RBD), the difference between receipts and payments should be computed by IFMIS Next Gen.
3. In case of any errors in submission of file to the payment system, system should generate error reports/ notifications.

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4. System would trigger requisite notifications to users in case of failures/ errors at any stage of payment and the error report should be sent to Treasury Officer and other Competent Authorities
5. For failed payments system should allow automatic re-submission of failed transactions after seeking necessary clarifications/ reviews as per due process and rules.
6. The system should have a validation to check if the failed payments against consolidated heads are re-processed successfully within the same financial year.
7. In case of multiple failures, system should prompt the Treasury Officer to cancel/restart the bill submission process from the source. This process will be finalized in consultation with CTA.
8. For reconciliation among RBI, Agency Banks and treasury following guidelines will be provisioned.
 - i. RBI may reiterate necessary instructions/directions to the agency banks to adopt revised format for reporting of transaction and settlement dates regarding collections by agency banks, to avoid mismatch in the Date wise Monthly Statement (DMS) submitted by the agency banks to the Treasury.
 - ii. RBI to set uniform time limit for reporting of receipt collections by agency banks in all States, to eliminate the discrepancy in the figures reported by agency banks. The agency banks are to ensure reporting of all collections of Government receipts on the Government portal to RBI e-Kuber through electronic file.
 - iii. a) States, which are yet to adopt version 2.0 of e-Kuber, need to do so in a time-bound manner, to ensure making the reconciliation process easier between the banks and the State Treasury/Accounting Units. All States should also integrate all Departments to Government portal for system generated challans for receipts.
(b) RBI to initiate reconciliation of discrepancies through Online Memorandum of Error (MoE) processing, which would lead to timely and faster reconciliation
 - iv. RBI to provide Major Heads-wise receipts in the Clearance Memo for easier reconciliation of receipts. An SOP in this regard may be circulated by RBI to all State governments, AGO and Agency banks. RBI to provide necessary support to all States, wherever necessary, for onboarding to latest version of e-Kuber.
 - v. The policy on legal requirement related to digital vouchers, as approved by the Comptroller and Auditor General of India, should be adopted by all States.
 - vi. All States to proactively move towards a system of fully digitised vouchers, where all sub-vouchers are submitted to the AGO and details of sub-vouchers are captured on the State's IFMS in a time-bound manner.
 - vii. The States need to implement a structured data capturing system within IFMS, ensuring that each voucher record contains Number of sub-vouchers in the main voucher, Invoice Number, Invoice Date and Invoice Amount etc.

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3.7.2.7 Self-Drawing DDO Processing

1. The system should allow the Self-Drawing DDOs to generate cheques
2. The envisaged system should allow the Self-drawing DDOs to create and approve Bills
3. The envisaged system should allow the Self-drawing DDOs to create e-advice and forward to the treasury to generate the e-file for payment, followed by payment processing and disbursement
4. Furthermore, the envisaged system should allow mapping of a self-drawing DDO to a Work ID against which bill will be created, submitted and approved. The system should also provide an option to transfer the work ID from old to new DDO as per applicable rules.
5. The system should update the work ID balance basis the bills generated, and payments made.
6. System should cater to the requirements of advance payments from Work ID and create a sub-id for settlement of the same. This will be carried out as per the rules laid down in CPWD Code or as decided by the Competent Authority.
7. System should enable the works to PD transfer and required accounting processes as laid down by the CPWD Code or as decided by the competent authority.
8. System should generate required accounts and reports as per the requirements of CPWD Code.

3.7.2.8 Payment by Cheque

1. In cases where payee bank account details are not available, the envisaged system should allow payments by cheques issued by the Payment Approving User/Treasury Officer.
2. System should allow printing of cheques in a pre-defined templated format.
3. System should allow the Treasury Officer to view all the approved bills by the DDO that are passed for payment and select them for cheque generation
4. The envisaged system should allow the TO to select the Bank Branch of which the cheque is to be issued.
5. System should have the provision for uploading bulk list of claimants to whom the cheque is to be issued through CSV/excel files/ other acceptable file formats. However in such cases, the system should only allow generation of cheques for bonafide vendors already existing in the system.
6. The envisaged system should have a provision of preparing multiple cheques from single bill in case multiple parties are associated with the single bill.
7. The system should verify the sum of individual cheques does not exceed the net value of the bill. The envisaged system should be equipped with other relevant validations as finalized in consultation with CTA.

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3.7.2.9 Cheque Reprocessing

3.7.2.9.1 Lapsed Cheque

1. The envisaged system should allow tracking of all cheques issued through the system for which the expiry date should be configured as per relevant rules of the state.
2. The envisaged system should lapse the cheques after the validity period has expired.
3. In such cases, the envisaged system should notify the concerned user and allow them to raise a request in the system for cheque cancellation by providing appropriate reason.
4. Once the TO, approves the request for cancellation of cheque, a non-Drawal Certificate should be generated for the same. The envisaged system should allow the download and print of this certificate.
5. On approval, the requested cheque should be cancelled and the cheque amount should be reversed to the available grant of the concerned DDO
6. The system should also provide a functionality to raise a cheque re-processing request as per prevalent rules.
7. Upon submission of the re-processing request, the system should verify the appropriate processing treasury mapped against the cheque
8. The system should route the requests, to the Treasury Officer to verify and approve/cancel the request and add their remarks accordingly
9. The envisaged system should allow authorized users to view the re-processing requests

3.7.2.9.2 Cancelled Cheque

1. If the cancelled/time barred cheque pertains to Deposit accounts, the balance in the individual deposit account should also get reversed. This functionality should be available in the envisaged system.
2. A request/claim will be visible to DDO of the for creation of a bill of amount equal to that of the cancelled cheque.
3. Whenever a bill is raised from the request/claim, the system will enable printing of a "Duplicate Cheque" based on a pre-defined format finalized with CTA.
4. Also, the revised cheque no. issued for the new bill should be linked to the details of the previous lapsed cheque.
5. System will create appropriate entries in the relevant account books of all such transactions.

3.7.2.9.3 Cheque Reconciliation Data Entry

This module will be used by payment branch user for reconciliation of physical paid cheques. User will enter the requisite parameters and based on these parameters system will fetch other

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cheque details. If cheque details get auto-populated, then reconciliation is considered to be done and payment branch user will then accept the cheque as reconciled.

3.7.2.10 Utilization Certificate Management

Utilization Certificates (UCs) are collected from grant drawing DDOs for onward submission to AG for GoI grants as well as Works related funds.

3.7.2.10.1 DDO Functionalities

- a. The envisaged system should provide a functionality to generate and submit Utilization Certificate (UC).
- b. The envisaged system should have details of fund utilisation along with the provision of submission of Utilization Certificate against every conditional/non conditional grant in aid vouchers.
- c. A provision to upload offline UC should also be made and enabled after due approvals.
- d. The system should also allow generation of UC for CSS post onboarding of state onto model 1 or 2 of Alternative Fund Flow mechanism of SNA.
- e. The system should have the provision to indicate on budget lines, whether UC would be required.
- f. System should provide provision to fill details of UC through a templatized form – against a valid Sanction Order
- g. System should provide DDO the provision to update/fill details of voucher/challan-wise adjusted amount against a payment sanction order. Alternatively, bills generated against a Sanction Order should be used to generate the Utilization Certificate
- h. The envisaged system should provide an option to supporting documents.
- i. After completing the form, the envisaged system should allow the DDO to submit the UC and route to the Competent Authority
- j. The envisaged system should allow appending of digital sign or e-sign to the UC.

3.7.2.10.2 Treasury Functionalities

1. System should provide an option to Authorized users to receive the UC submitted and view the list of Utilization Certificates submitted. The dashboard could display parameters such as:
 - a. Utilization against payment sanction order
 - b. Pendency details of UC against payment sanction order.
 - c. Record of voucher-wise and challan-wise adjusted amount against the sanction
 - d. Download of templatized UC
2. System should provide an option to raise query against the UC and the UC would get routed back to the source

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3. The envisaged system should provide an option to the Competent Authority to accept the UC

3.7.2.10.3 Functionalities at AG End

- A. Data and associated report for Grant in Aid and the Utilization Certificate must be made available to the AG through envisaged IFMIS Next Gen.
- B. The envisaged system should enable a dashboard in the AG user login, The dashboard should allow the display all UCs, their status (accepted, submitted/in-progress) pendency details etc.
- C. The envisaged system should allow AG users to review and submit queries against any of the UCs, which would then be routed to the concerned user.
- D. IGAS-I, IGAS-II , IGAS-III and IGAS-IV forms provision must be made available for capturing data in IFMIS and its access to AG.

3.7.2.11 Jurisdiction less Bill Processing Centre

Jurisdiction less Bill Processing Facility (JbPF)

1. The envisaged IFMIS Next Gen should have a provision to support and establish a model of a faceless / contactless Treasury as and when notified by GoMP.
2. The envisaged system should facilitate automated, random allocation & routing of bills across the treasuries through JbPF. The system should be designed in such a way that bills / claims submitted by a DDO should randomly and automatically be allocated to any district treasury, as and when notified by GoMP. Accounting process shall be finalized in consultation with the AG, Madhya Pradesh. The system will display all the bill/claim requests as a centralized pool available to JbPF. A team of experts will be stationed at Central level to perform sample review of transactions and raise alerts in case of any observations against the processes followed or claims submitted by the offices. Experts would also perform post audit of sample transactions carried out under IFMIS Next Gen, as and when notified by GoMP. The system should allow centralized salary processing for the state, as and when notified by GoMP. The system should allow centralized salary processing and pension processing.

*Notwithstanding anything else given in the RFP, bidders to note that the above requirements will supersede.

3.7.2.12 Off-Budget Receipts & Payment Processing

The envisaged system should have a mechanism to record off - budget amounts through the Budget module. Off Budget entries refer to the amount excluded from the state government budget provision.

1. Funding agencies such as GoI typically disburse off - budget funds to Operating Agencies' bank accounts in agency banks – either by cheque or though e-payment or any other agreed channel

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2. The envisaged system should provide a functionality to authorized users to capture various parameters of Off-Budget disbursements –
 - Capturing Scheme-wise funds received from funding agencies based on the sanctions
 - Capturing Scheme-wise interest amount credited by the bank
 - Capturing details on funding agency, mode of payment, amount, account details etc.
3. The envisaged system should integrate with Agency Banks to update/provide the data of scheme-wise funds received from the funding agencies
4. The envisaged system should provide an option to upload supporting documents against off-budget entries.
5. The envisaged system will have provision to validate the data entered by Implementing Agency with the data provided by bank.
6. The envisaged system should maintain the balance amount for each scheme – closing balance for the scheme will be displayed as opening balance in next FY
7. The envisaged system should also have integration with PFMS to capture scheme-wise payment details.
8. The envisaged system should enable the Implementing Agency to capture the interest amount credited by banks for each scheme in the system
9. The envisaged system should provide an option to capture State share details along with central share
10. IFMIS Next Gen will also have provision for interfacing with the PFMS and capturing the details of receipts from donor agencies through the PFMS to the different implementing agencies

Off-Budget Disbursement by Operating Agency to Implementing Agency

1. The envisaged system should provide an option to the Operating Agency to disburse funds received from Funding Agency to Implementing Agency – through e-Payment/Net banking or Cheque
2. Details of implementing agencies will be maintained in the system by allotting a unique identifier for each of the implementing agencies.
3. Operating Agency will enter the amount to be disbursed to Implementing Agency in the system and forward the disbursement for approval by Competent Authority functioning as Counter Signing Officer
4. System will have provision to feed amount and account details and generate a templated cheque– the Counter Signing Official will have provision to validate and approve the cheque in the system. Provision of approval through DSC or e-Sign would be enabled in IFMIS Next Gen.

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5. System will verify the balance availability in the scheme and accordingly will allow providing approval to the cheques.
6. Once approved, system will deduct the amount to be disbursed to the implementing agency from the balance of operating agency for the corresponding scheme.
7. System will trigger notifications to both source and the recipient.

Off-Budget Disbursement by Implementing Agency to Party

1. The envisaged system should provide an option for the implementing agency to disburse funds received from Funding Agency to party/ beneficiary – through multiple channels
2. System should generate a Unique Transaction Number (UTN) while capturing various details during disbursement to a party by the Implementing Agency
3. Various parameters such as Party Name, Party Account Number, Scheme Details, Amount Details, Bank Account Number etc. should be captured
4. Envisaged system should also generate a templated cheque capturing the key details
5. System should have validations for the scheme balance.
6. Upon disbursement, relevant notifications should be triggered.

3.7.2.13 Other Functionalities

1. The envisaged system should display the list of work IDs in IFMIS so that any deposit made through challans can directly be mapped to the work IDs and there is no need for this process to happen separately. Necessary validations on the amount, Department etc. should be enabled in the system
2. The system should generate reports corresponding to GST TDS deductions and the refund bills that have been generated
3. Similarly labour cess deductions should be accounted for and payments should be made to the respective beneficiary account. The system should also provide an option to authorized users to set up a mandate for such periodic payments.
4. The process for accounting of statutory deductions such as TDS etc. should be simultaneously released at the time of bill approval and schedule payments.
5. There shall be API based integration with banks to fetch balance/statement of available bank accounts of DDO office.

3.7.3 E-Sanctions/ Online UC

For all such payments, which need sanction from Competent Authority (as per MPTC), a payment e-sanction will be generated through IFMIS Next Gen. The system should provide facility of generation of temporary sanction order, to generate bills under BMS module, if E-Sanctions/ Online UC module is planned to be developed after BMS module. The following block diagram shows major components of the module.

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e-Sanctions / Online UC	Templatized Sanction Order	Cancelation of Sanction Order	Works Management Integration
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Figure 16: e-Sanction / Online Utilization Certificate

Following functionalities are envisaged in IFMIS Next Gen –

1. IFMIS Next Gen should allow generation of a templatized Sanction Order(s) (SO) and make them available in real time. Sanction order templates should be configured in the system as per relevant rules of the State. The SI shall define and configure the standard Sanction Orders in consultation with CTA. The envisaged system should allow automation of all SOs associated with bill processing project approvals, administrative approvals, budget management activities, payment order, work order, etc.
 2. System should generate a templatized Payment Sanction Order and map them to the Bill Types.
 3. The system should be able to flag different types of expenditure.
 4. The system should allow multiple sanctioning approvers and operators. However, the DDOs associated with the Sanction order should be tagged in the SO generation screen. Only these DDOs will be allowed to use the SO, when they raise the bill.
 5. The system should allow tagging of DDO wise limits within a sanction order.
 6. Sanctions should be approved by sanction issuing authority using Digital Signature Certificate (DSC) or Aadhaar e-sign.
 7. System would facilitate cancellation of SOs available at respective logins of Approver/ Creator as per applicable rules
 8. Option for mapping of multiple DDOs to SOs should be provided as applicable
 9. The system should have the separate facilities to access or update/approve/forward for revision of Sanction Orders.
 10. Each Sanction in the envisaged system shall refer to a unique ID and the revised sanction should refer to original sanction order
 11. Bill preparation should take into account the corresponding sanction order and the approved budget. All details related to the Sanction Order should be auto populated once the sanction ID is selected in the bill creation screen.
 12. Sanction order should only be generated in case of budget availability. Such validations should be enabled in the system.
 13. FD should have the facility for the endorsement of sanctions.
- Sanctions order which are not either paid or cancelled will be termed as lapsed order and from the next year it will get carried forward.

3.7.4 Deposits

Deposits	Maintenance of Master for Deposit Creation	Deposit Account Creation	Payments from Deposit Accounts
	Deposit Account Maintenance	Transfer between Deposits	Specific Requirements for Different Types of Deposits
	Fund Transfer to Deposit Accounts	Management of Contingency Including Nidhi	Management of Failed Transactions

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Figure 17: Deposits

All the HoAs over 8000 (Contingency Fund) form a part of Public Accounts of the State. Under the Deposit Module, there are following types of Deposits provisioned in GoMP –

#	Type	Description
1.	Provident Fund	4 types of funds - mainly GPF, DPF, AIS-GPF, CPF with MH 8009. Account of these HoAs will be maintained individually at e-HRMIS level as well as in the consolidated form at the state level in Deposit Module. System will calculate the interest on every individual account and credit them at the end of Financial Year or as per the rules applicable. The consolidated amount of interest will be linked to the budget and shall be transferred to individual accounts from HoA 2049. The cumulative amount of interest will be shown as credit in the 8009 HoA. For PF interest calculations, year will be treated from March to February. The amount of interest shall be calculated by the system on 31 st March and credited in the individual accounts before the closure of transactions by RBI or the agency bank of the State.
2.	Insurance Scheme	This is linked with HoAs 8011- GIS and other insurance schemes, 8342 Family Benefit Fund, 8658 AIS-GIS etc. The account of these Schemes shall be maintained individually at HRMIS level and in consolidated form at Deposit Level. The amount deposited will be bifurcated in insurance part and savings part as per the prevalent rules. The savings part shall be interest bearing and this interest will be paid through proper HoA at the retirement/demise of the employee.
3.	Reserve Funds	2 types of Reserve Funds are there - Interest bearing (like State Disaster Fund, State Compensatory Afforestation Fund etc.) and Non-Interest Bearing (Famine Relief Fund etc.). System shall calculate the interest on the interest-bearing Reserve Funds.
4.	Depreciation Funds	It is maintained in MH 8226 and related with many departments like Govt. Press etc. The amount of depreciation is transferred in this HoA by the service head of the department and

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#	Type	Description
		used for purchasing new machinery later on. System will maintain the account of this HoA Department/DDO-wise.
5.	Development and Welfare Fund	It is maintained in MH 8229. Examples of these funds are Electricity Development Fund, Mines Welfare Fund, Consumer Welfare Fund, Forest Development Fund, MP Stamp Fee Charge Fund etc. System will maintain accounts of all these funds.
6.	General and other reserve funds	It is maintained in MH 8235. Example of these funds are Guarantee Redemption Fund, Calamity Relief Fund, Road Safety Fund etc.
7.	Personal Deposit (PD) 8443-00-106	Opened by Government Departments for purposes after obtaining necessary sanctions.
8.	Education Deposit (ED) 8443-00-123	Opened by Principals of schools and colleges for specific purpose.
9.	Works Deposit 8443-00-108	Operated by Works Departments and generated in the form of work ID
10.	Security Deposit (SD) 8443-00-103	Opened and operated mainly by Works and Forest Departments where a certain sum is deducted as a Security Deposit from vendor bills and refunded to the vendor once the work is complete or any other relevant condition as defined is met.
11.	Revenue Deposit (RD) 8443-00-101	These Deposits are used in cases where payment is being made in perusal of SR 325 of MPTC 2020. Available Amount of these challans lapse after 3 years if the value is > Rs.10000, and and in one year if value < Rs. 1000
12.	Civil and Criminal Court Deposit (CCD and CrCD) 8443-00-104 and 105	Opened in treasury offices when the funds are deposited by the DDOs/ Establishments of the court.
13.	K Deposit	K-Deposit accounts are maintained by BCO/DDOs to maintain funds from the allocation received by them from the consolidated fund beyond the current financial year. All deposits and withdrawals from K-Deposit accounts to be done after prior approval of Finance Department.

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#	Type	Description
14.	Special Deposit (SpD)	Deposit accounts which provides the option to Corporations/ Agencies/ Local Bodies of the State for depositing the funds lying idle in their bank accounts. As per MPTC 2020, the State provides +0.5% interest more than the prevalent rates of Deposits in State Bank of India if the fund source is self-generated
15.	Local Fund Deposit (LFD) MH 8448	Funds received from the Local Fund Bodies are maintained as LFDs in Treasuries. Finance Department pays interest on these Deposits. LFD interest deposit happens at the closing of a Financial year
16.	Ladli Laxmi Scheme Fund 8448-00-120-0120	Ladli Laxmi Scheme fund is also the part of Local Fund Deposit, but it follows separate set of interest calculation criteria as defined in the rules.
17.	Market Loan Related Deposits, Miscellaneous Deposits and National Mineral Exploration Trust Deposit	System will maintain the account of these deposits in the MH 8449
18.	Suspense Account MH 8658	System will maintain the suspense account for all the unclassified items.
19.	Paid and in-cashed cheques 8670	This account will be used for the cash management in the transit period of cheques realization.
20.	Departmental Balances 8671	These accounts receive debit for the cash balance held by departmental officers. System will maintain specific identity for transactions received from Service Head in a particular office/employee.
21.	Permanent Advance 8672	DDO-wise and Year-wise account of this HoA will be maintained. The envisaged system should allow maintenance of records for issuance of Permanent Advance as one time advance which can be drawn by the DDOs after obtaining necessary approvals and sanctions. DDO will have to submit Certificate at the end of every Financial Year regarding balances available with him in the permanent advances. The DDO will have a current account with the limit of amount of Permanent Advance, and DDO will make expenditure through this current

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#	Type	Description
		account (Need changes in Rules). Permanent Advance facility by use of Deposit Accounts as virtual accounts or wallets like eRupee-CBDC.
22.	Cash Balance Account 8673	This is related with the amount invested by RBI through Treasury-Bills. This will be handled in Debt and Cash Management Module and abstracts of balances shall be the part of this deposit account.
23.	Cash Balance of State available at RBI 8675	This is related with the balance amount available with RBI post investment by RBI through Treasury-Bills. On the maturity/re-discounting of Treasury Bills, the interest received becomes the part of the receipts under the debt HoA and principal amount becomes the part of MH 8675. System will maintain the account of this HoA.
24.	Write-off Account 8680-00-102	This minor head is intended to accommodate 'Writes off from heads of account closing to balance sanctioned by the authorities competent to do so in connection with book-keeping errors or other cases in terms of Rule 38 of Government Accounting Rules, 1990. System will maintain the account of this HoA.
25.	Remittances 8782	It is related with works account and will be detailed out there. A summary of this account shall form the part of Deposit Module.
26.	Adjusting Account between Gol and State Government 8786	This account will be used for adjustment between Gol and the State
27.	Interstate Suspense Account 8793	It is used for the settlement between the States related with pension disbursements etc
28.	Cash Management 8999	It is related with the Cash Balances of the State. It will be handled in Debt Management Module and abstracts of the transactions will be the part of this module.
29.	Others	Other Heads greater than 8000

Table 8: Type of Deposits in MP

In the above list, PD/ED/CCD/CrCD/LFD/K-deposit/SpD are maintained by DDOs or Account Operators in Treasuries. Such accounts allow ease of access to necessary funds, transferred through By-Transfers or Challans into the Deposit accounts, to allow withdrawal for specific

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purposes. All the HoAs of Public Account including Contingency Fund (Major Heads from 8000 from 8999 or as per the State notifications) and their balances with passbook similar to Savings accounts should be maintained in the Deposit module.

Following section specifies the indicative list of users and their roles to be enabled in the envisaged system –

- Finance Department: Receives proposals from Departments for opening new Deposits through IFMIS. Examines and approves for Deposit account opening proposals (K-Deposit, PD, ED, LFD, SPD)
- Administrative Department: Receives intimation from FD regarding approval of Deposit proposals. Issues Sanction Order (SO) for Deposit opening
- Deposit Administrator: Operates the Deposit account and manages fund transfers, withdrawals etc. after due sanctions. Responsible for fund source selection & approval and purpose code selection
- Treasury: Upon receipt of the approval from FD, creates the operator code in the system to allow Deposit creation
- AG: Receives intimation of Deposit Account opening, fund transfers. Preparation and publication of broad-sheet with Operator wise opening and closing balance, debits and credits during the month

Apart from the above, the envisaged system should also allow the following –

- The envisaged system should maintain DDO wise, Treasury wise as well as monthly and yearly transaction data of the HoAs 8000 and above. Accounting should be available in the system accordingly.
- All challans will be mapped against a Recipient Authority/Operator/DDO and refund will be possible by the authorized user as per prevalent rules. This Recipient Authority ID will be flexible to accommodate changes in DDO Code, closing of the Recipient Authority and creation of new authority to process the transactions after closure.
- The envisaged system should allow recording of instances where a stock suspense account as a temporary measure is maintained for recording of material purchased when the actual HoA for its accounting is not yet identified.
- The envisaged system should allow sourcing of funds to deposits through various channels - Consolidated Fund of the State or through Challans processed through the web portal/ physical challan. These will be governed by relevant state rules.
- A dashboard should be provided to cater to the expenditure against the deposit accounts. Also IFMIS Next Gen should provide forward visibility of expected expenditure from deposit accounts.

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3.7.4.1 Maintenance of a Master for Deposit Account Types & Related Rules

1. The envisaged system should allow creation of different types of Deposits, along with specifying business rules for creation, sanction, withdrawal, lapse of these Deposits. A dedicated Deposit Admin interface should be made available to the Finance Department or Competent Authority for carrying out these activities.
2. All Deposits should be governed by these business rules. Only the Competent Authority should have the access rights to configure and update such rules through the rule interface.
3. The system should allow updation of such rules in the system as and when there are changes to relevant Acts and Rules.

3.7.4.2 Deposit Account Creation

1. The envisaged IFMIS Next Gen should allow the Authorized Users of Head of Office (HoO) to raise a request to HODs for creation of deposit accounts. HODs in turn will send the request to HoAD and then HoAD will send this request to FD as per laid down rules and procedures. This workflow should be enabled in the system. In case of CCD, the request for account creation will be raised by the concerned court which will be approved by the treasury. Request for creation of Special Deposit account will be received and approved by the treasury, as per the prevailing rules.
2. The system shall provide a drop down for selecting the type of deposit account i.e., Personal, Education, Court, Special etc.
3. The system shall display an online proposal form for creation of the request for deposit accounts. It is envisioned that the envisaged system will have a dedicated interface for Deposit proposal preparation and submission to the Competent Authority. Examination of proposals within the Department should also be enabled through the system itself.
4. The system shall allow Administrator/ HOOs/ HODs to capture the details for raising a request including HOO Code, Department, DDO Code (who will operate the Deposit Account) Purpose, Expenditure mode (Challan wise expenditure from total balance available), Administrator Code, Administrator Name, Scheme ID, Scheme Description, and Amount etc.
5. In case of Special Deposit, a user will be able to submit the request to the treasury for opening the Special Deposit Account in the prescribed format for depositing the amount of his own fund source and Treasury will be able to approve the request for opening of the same. However this will be decided as per the prevalent rules of the State.
6. The system shall send a notification to the Administrative Department on submission of the request by the HODs/ HOOs
7. The system shall allow HoAD to submit the request to the Finance Department after review and verification.
8. The system shall allow the Finance Department to review and accord their approval on the request submitted

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9. On approval by FD, a new operator code will be created and displayed to concerned Treasury and DDO. The Treasury will be able to provide the necessary roles to carry out the transactions and the operator will be able to map the users for processing the various claims at their end.
10. The system shall notify AG users and concerned HoAD/HoD/HoO/Treasury regarding creation of new deposit accounts.

3.7.4.3 Payments from Deposit Accounts

1. The system should support the DDO/Deposit operator to generate payment advice, e-cheque or make online payment to the beneficiary/ vendor. All such requests should be managed through the Bill Management System module. Creation of Deposit payment bills should be enabled through the Bill Management System.
2. The system should support carrying forward of the closing balances for the concerned Deposit accounts at the end of the defined accounting period as per stipulated rules
3. PD to PD, ED to ED, SPD to SPD etc transfers should be allowed using the system by any Deposit Admin by creating and approving the request and then generating Sanction Order for the same. In PD to PD transfer, system should take care that the amount has been transferred in the same purpose/budget head, as it was received previously. A special screen shall also be available to shift fund across various type of deposit accounts i.e from PD to ED, PD to CCD etc.
4. All wallet transactions involving debit to the wallet, including cash withdrawal transactions should be enabled in the system
5. System³ should generate vouchers for all the transactions not carried out or approved by treasury and a separate report will be available in the system to be shared with AG. These type of transactions include PD to PD transfer.
6. In case of Works to PD transfer, system will maintain correct account entries for such transactions. A separate column in the plus/minus of the deposit account will show such transfers and enable AG user for proper accounting of the same.
7. If modification to a deposit account balance is required (as an exception, only by the Authorized user), then it will be carried out through voucher generation with associated sanctions of the competent authority. This will be the part of treasury monthly account.
8. PD for Sikho Kamao yojna, which will function in an automated way in Payment Process by capturing the challans (of both fund source- consolidated fund and other than consolidated fund), while making the payments against them.

3.7.4.4 Deposit Account Maintenance

1. The system shall assign a unique account number to each Deposit A/C and track the entire lifecycle of deposit account through this unique account number

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2. The system should allow generation of the plus minus memo for the Deposit accounts through the system and display the accurate balance and passbook for Deposit Administrators.
3. The system should allow generation of custom statements and passbook for the Deposit Account by providing multiple inputs like the Deposit Account number, From/To dates etc.
4. The system should display accurate balance in the passbook reconciled in accordance with the plus minus memo.
5. The envisaged system shall identify deposit amount claimed within a certain period of time and due for lapse as per the MPTC rules (In case of RD/CCD).. The system will also identify the Deposit Accounts due for lapse (In case of PD/ED/K-deposit). Report for accounts/amounts due for lapse at a certain period of time should also be available in the envisaged system.
6. The system will lapse such amounts and accounts by creating voucher. The system should have functionality to handle lapse of relevant Deposit accounts and intimating the AG. The envisaged system should allow automatic generation of sanctions (in case of PD/ED) and challans (in case of RD, CCD etc) for lapsed deposit accounts
7. The system should allow generation of lapse deposit statements as per MPTC rules.
8. The envisaged system should generate reports like schemes covered under PD/ED accounts, source of fund and other details as desired.
9. As per MPTC rules, at the end of every financial year, the Deposit Admin and Treasury Officer reconcile the Deposit balance and the Deposit Admin submits a declaration through the system to the Treasury that there is no discrepancy in the closing balance. In case there is discrepancy, the Deposit Admin coordinates with the Treasury Officer to remediate the same. For this purpose, IFMIS Next Gen should send a notification to the Deposit Admin to certify that there is no discrepancy in the closing balance. In the absence of this certification, the system should not allow any transactions in that Deposit Account. The system should allow authorized users to edit this functionality as per the relevant rules.
10. Every month, the Treasury sends the Plus Minus memo for Deposit accounts to the AG. This should be facilitated through the system itself by allowing AG users, access to such reports. The envisaged system will have API or Server based integration or txt file sharing with AG to avoid manual punching of the data. Submission of all the accounts related with Deposits to AG will be through its integration process. The system should have provision of Requisition of Correction for Deposit Accounts.
11. The envisaged system should have provision of online reconciliation at a pre-defined frequency for PD, ED, CCD and other deposit accounts with AG
12. The system should allow transfer of funds from any deposit A/c to any HoA and HoA to any Deposit A/c on special Govt. order.
13. The envisaged system should allow multiple fund sources (Consolidated Fund & Challan) to be selected for a single Deposit Account.

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14. The system should generate all the required reports (for example – Reconciliation Register of Deposited amounts, Details of Lapsed Deposits, Certificates of Balances from the Deposit Administrators etc) and certificates and allow users to sign them digitally. However it should also allow users to enter the verified amount and reason of the deviation from the system generated reports in not less than 200 characters. System will also allow to upload any document further to support the reason entered by the user for the deviation.
15. System should provide facility for automatic lapse of Personal Deposit Accounts (Consolidated Fund Source) at the end of Financial Year in the respective receipt head of account of the Madhya Pradesh.
16. Process to extend the validity of Deposit Account to be developed.

3.7.4.5 Transfer between Deposits

1. For any kind of transfers from Deposit accounts, the system should allow generation of online sanctions from the Competent Authority. Transfer requests should be allowed only if the sanction is approved.
2. The system should allow the Deposit Account operator to raise a request for transferring of funds to another Deposit Account. Selection of scheme details from which funds will be transferred should also be allowed in the system.
3. The system should route the request to Competent Authority for approval of transfer of funds. System will generate a sanction order and a voucher during the Deposit to Deposit fund transfer process.
4. Special screen shall authorise a deposit operator to transfer the fund in different categories of deposits. For example, PD to CCD or PD to ED etc.

3.7.4.6 Specific Requirements for Different Types of Deposits

1. Personal & Education Deposits
 - a. Online deposit through Cyber Treasury will be available for all the PDs/EDs.
 - b. System will have facility to open Sub-PDs below a PD, and the Sub-PD of level 2 below level 1 Sub-PD.
 - c. PD operator will have facility to assign limit to its Sub-PDs subject to the balance available in the PD.
 - d. Sub-PDs will create a bill to withdraw an amount within the drawing limit assigned to them. The drawing limit will be decreased post creation of a voucher. In case of failed transaction, the challan of such failure will be credited back to the PD and drawing limit of the Sub-PD will be increased by such amount.
 - e. PD operator will have facility to relook the drawing limits of Sub-PDs and decrease or increase the drawing limit as per the requirement.

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- f. PD operator will also have the facility to assign this limit in a specific budget-line mapped with the PD operator to have budgetary control over Sub-PDs.
- g. All the accounting of all the Sub-PDs and PD will be maintained at the Treasury, which is mapped with the PD.
- h. An SNA-SPARSH like facility shall be provided to deposit operator to ensure timely release utilization of fund.

All the facility provided by the bank will be available for the PD with the added feature that real time by-transfers will be possible for meeting out the tax liabilities and budgetary control over Sub-PD operators.

2. Security Deposits:

- a. For creation of Security Deposits, workflows for obtaining relevant sanctions as per relevant rules should be configured in the system. In case no sanction is required, the system should allow configuring the rules for the same.
- b. The envisaged system should allow recording of an amount received from contractors as security deposit.
- c. The system should also allow the DDO to specify security deposit deductions in the vendor bills and the system should update the Security Deposit balance for the concerned DDO as a result of such deductions.
- d. The system should allow the Deposit Operator to map security deposits to funds, the Scheme Code, Contractors and the Work/ Project ID etc.
- e. The system should allow repayment of the SD upon receiving the claim from the contractors through the vendor portal. Request for withdrawal of Security Deposits should be initiated from the Vendor portal. Repayment shall be done post approval from Competent Authority.
- f. The envisaged system should allow generation of ledger for the Security Deposit through the system itself.

3. Revenue Deposits

- a. The system should allow the Deposits in pursuance of SR325 of MPTC or relevant rules.
- b. The envisaged system should allow recording of such deposits either through the Cyber Treasury portal or physical challan or By transfers from a bill. System will lapse the amount automatically in HoA 0075 by creating a voucher as per SR334 of MPTC or relevant rules.

4. Civil/Criminal Court Deposits

- a. The envisaged system should allow the Court DDO to By-transfer an amount for a particular CCD. Deposits through Cyber Treasury and physical challan and CCD to CCD transfer should also be enabled through the envisaged system. All

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payments in the form of dues or fines received by the Court should be recorded in the CCD through challans.

- b. The system should present a view of the daily cash flows to the Court DDO and other authorized users.

5. Local Fund Deposits:

- a. Once LFD approval is provided by the Finance Department, a dedicated login should be created for LFD Account Operators.
- b. The envisaged system should allow withdrawal from the Local Fund deposit Account by the designated LFD Account operator by raising a claim through their IFMIS Next Gen login.
- c. The envisaged system should provide an option to the FD users to calculate the interest on LFD Account on the basis of the available balance. The calculations of Interest will be carried out by system itself. The system should update the Deposit balance with the interest accrued.

6. K-Deposits

- a. Transfer and withdrawal of funds from K-Deposit account should be done after obtaining necessary sanctions from the Competent Authority (FD) as per the Government rules, which should be configured in the system.
- b. The sanction workflow should be configured in the system itself.
- c. The system should be able to generate various reports for K-Deposits.

7. Special Deposits

- a. These refer to deposit accounts which provide the option to Corporations/ Agencies/ Local Bodies of the State for depositing the funds lying idle in their bank accounts. As per MPTC 2020, the State will provide +0.5% interest more than the prevalent rates of Deposit in State Bank of India or any other Banks, if the fund source of the amount of the Institution is their own, however no interest shall be payable in SPD Accounts if money deposited by the Institution from Consolidated Fund of the State or GoI or others. The process of creation of SPD is currently similar to PD account creation. For operating SPD, Employee code and DDO codes will be created in the system. These users will only have access to their SPD accounts and no other processes in the system if not available earlier. The envisaged system should allow setting up and maintenance of such Deposits including interest computation, issuance of passbooks, closure of accounts etc.
- b. The envisaged system should provide an option to view the funds which are generated through own source (interest bearing) and period for which fund is transferred to SPD. Accordingly, interest calculation should be done. FD will have

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access to the master of interest rate. The envisaged system should allow authorized users to configure the interest masters.

8. Works Deposits

- a. The envisaged system should allow creation of works deposits as well as the associated reports – Form 64, 65, 80, 46A, CTR, CIC etc.
- b. The system should generate Work ID wise report for closed DDOs, merged DDO along with challan wise balances
- c. Identification and maintenance of such accounts through their work ID should be allowed.
- d. Categorization of budgeted and non-budgeted work IDs should be allowed at the BCO/ DDO level by following the process below –
 - a. Budgeted and Non-Budgeted. Budgeted work IDs are created at BCO level (which is then mapped to the DDO by the BCO).
 - b. Non-Budgeted work IDs are created at DDO level. These work IDs can either be Security Deposits (deductions from vendor bills) or Deposits for carrying out a specific work (deposits through challan).
 - c. Categorization of budget line should be available in the system to be done by the BCO.
- e. A self-drawing process for withdrawal should be enabled in the system. The system should also allow maintenance and sharing of accounts with AG through their login.

3.7.4.7 Fund Transfer to Deposit Accounts

- a. The envisaged system should allow fund transfer to Deposit Accounts through multiple channels as per relevant rules of the State.
- b. The system should allow DDOs of the State to transfer fund from the Consolidated Fund to Deposit Accounts, post mapping of the budget line in such PD/K Deposit/LFD/CCD by Deposit Admin
- c. The envisaged system should also allow any users to deposit funds into a Deposit Account of through Challans by integrating with the Cyber Treasury module.
- d. IFMIS Next Gen shall provide an option to view all transactions of PD/ED/CCD operator wise in IFMIS Next Gen

3.7.4.8 Management of Contingency including Nidhi

The envisaged system should allow recording, management, and accounting of Nidhi like State Disaster Response Fund (SDRF) etc and mentioned in the table 5 of this module. System should have integration with PFMS for capturing the Nidhi amounts

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received by the State through PFMS. Various reports related to utilization of the said amount should be generated by IFMIS Next Gen. System will have facility to maintain Contingency Fund as per the MP State Contingency Fund Act and Rule.

3.7.4.9 Management of Failed Transactions

The failed payments will be credited in the HoA 8658-00-102-0119, and concerned DDO will have to make a refund from this HoA within 60 days of such failure of payment. If DDO fails to make a refund, then system will credit back such amounts in the receipt HoA of concerned department. If there is no any receipt head of a department (in the List of Major and Minor Head maintained by Comptroller General of Account and applicable in Madhya Pradesh with allowed changes and in the shape of Budget Document), then such remaining amount of failed transaction will be credited in the HoA 0070-60-800-0099.

If the payments failed in SNA SPARSH, then the amount will be credited back in the HoA 8658-00-102-0119 and will be mapped with the concerned SLS. Refund process of such failed transactions will be processed by the concerned DDO of that SLS and the file will again be re-pushed to the PFMS and concerned Program Division for acknowledgement.

If the payment was made through an HoA of Public Account/Deposit Operator and failed later, then the amount will be credited to the HoA 8658-00-102-0119 and will be mapped with Deposit Account. Deposit operator will process the refund of such failed payments

Facility to open Sub-PD accounts under a PD should be there in IFMIS Next Gen. These Sub-PDs could be at multiple levels. The Deposit admin will be able to provide limits for these Sub-PDs as per the balance available with them. Further Level 1 Sub-PD will be able to redistribute its limit among the Sub-PDs of next level and so on. All the Sub-PDs will draw amount from the main PD amount under their prescribed limits. The limit will be dynamic and will decrease at the instance of withdrawal by a Sub-PD. Deposit Admin will be able to redistribute the limits as per the performance of Sub-PDs. Similar rights for redistributing the Limits will be there with higher level of Sub-PD for lower level of Sub-PDs. System will provide all the necessary reports of limits and modifications of the limits vs utilization of funds. System will also provide the report of the bills in process and the amount blocked due to these undisbursed or undecided bills. This functionality may allow State Institutions and PSUs to operate through IFMIS and thus improving the Cash position of the State

3.7.5 Purchase & Inventory

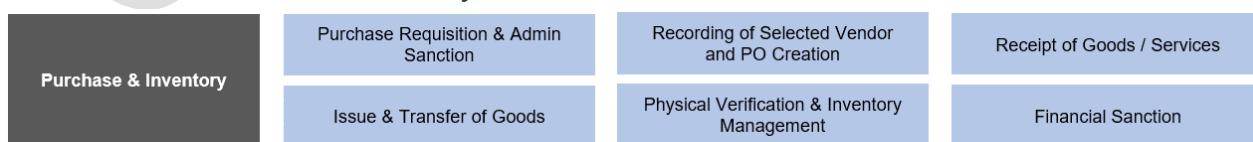


Figure 18: Purchase & Inventory

The key functional entities of the envisaged Purchase & Inventory module are briefed as below

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- **Requisition & Sanction** – This functionality should allow generation of purchase requisition from source (source could be demand/project work plan) against the relevant budget head, generate receipt of purchase requisition from the concerned department and approval for purchase of goods, services, assets and beneficiary of project scheme by the competent authority.
- **Vendor Selection & PO Creation** – This functionality provides the option to record the outcome of the tender process and issuance of Purchase Order to the Vendor.
- **Receipt of Goods/Services/Maintenance/Hiring/leasing** – This functionality provides the option to record receipt of Good/Services including inspection and verification of quantities against PO as per relevant rules. This functionality may be provisioned if required by the CTA
- **Issue & Transfer of Goods** – This functionality provides the option to record issuance of goods to the concerned stakeholders and the transfer of goods between stakeholders after necessary approvals.
- **Physical Verification & Inventory Management** – This functionality provides the option to facilitate inspection & periodic audits of physical goods against online inventory, reporting of discrepancies and closure of the issues flagged during inspection.
- **Financial Sanction:** The functionality shall allow issuance of the Financial Sanction for purchase, based on the Requisition Admin Sanction.

3.7.5.1 Purchase Requisition & Admin Sanction

1. The masters for this module will be handled/maintained as per section 3.12.2.
2. The system should allow Purchase requestor to prepare Purchase Requisition (PR) of Goods, Services, Assets or other allowed items. The workflow for approval of the PR should be enabled in the system as per relevant rules.
3. The system should provide an option to verify, modify and cancel the requisition by the requestor. The purchase requisition shall contain at a minimum - department name, linked DDOs, purchase requestor name, items to be purchased with tentative amount and supplier details.
4. The system should have the option to initiate a request for sanction of purchases.
5. The system should allow single admin approval for multiple work order/purchase orders. Similarly, single work order/ purchase order can have multiple invoices / financial sanctions (FS) associated with it. FS can be issued at any time after PO is issued and the submission of bills into disbursement office.
6. Once the requisition is approved in the system, the system should send a notification to the Competent Authority to issue Admin Approval or Admin Sanction and issuance of Purchase Order as per rules.

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7. For requisition of banned items, system should allow FD to provide the approval as per relevant rules
8. The system should allow the Competent Authority to generate Admin Approval. The system shall also check budget provision and calculate the available budget for sanction.
9. For perishable and non-perishable items, the system should flag the items in the master and maintain the record in the Asset Register module.

3.7.5.2 Recording of Selected Vendor and PO Creation

1. The vendor's can be selected through any procurement methods like GeM, direct procurement, tender procurement etc. IFMIS Next Gen should allow authorized users to record the result of the procurement process.
2. The envisaged system should provide facility to record Unique procurement ID from GeM and shall provide regular update on the ongoing process against each ID for the associated user.
3. The envisaged system should provide the facility to record Unique procurement ID from MP Tender Portal and shall provide regular update on the ongoing process against each ID for the associated user.
4. For direct procurement from local market, the envisaged system should allow the user to onboard the vendor and allow the vendor to provide a detailed quotation for the requested product & services within the limits specified by MP Procurement rules.
 - a. The system should populate the vendor request for the requested items for administrative & Financial approval
 - b. Vendor should be able to provide the pricing for each line item(s)
 - c. The qualifying bidder should be auto populated for selection
5. The envisaged system should also facilitate updation of the purchase order.
6. The system should allow the user to create and issue PO against the acknowledgement received from vendor. Against one requisition, multiple POs may be allowed.
7. The system should allow the user to choose the requisition from the displayed line items to create PO.
8. The system should have provision to notify the vendor/relevant stakeholders for required information.
9. The envisaged system should allow the Competent Authority to append their Digital signatures or e-sign to the sanction order and other relevant documents
10. The system should have the provision to notify or display PO Status in the Summary Screen and the work list
11. Post verification, the system should forward the requested PO for approval of the Competent Authority.

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12. Post validation, the envisaged system should approve the Purchase Order and forward the approved PO with other relevant document to the vendor.
13. The PO should be available in the vendor portal and the vendor should be notified accordingly.
14. The envisaged system should also facilitate the revision or cancellation process of approved PO.

3.7.5.3 Receipt of Goods/Services

1. The system should acknowledge the receipt of goods received after inspection and validation of goods against the PO.
2. Each item received shall be tagged with a QR Code/Barcode or a Unique identifier.
3. The system should record profile parameters of received goods/services like end of life, renewal, validity etc. and should provide a recommendation either to replace or extend the life of goods/services accordingly.
4. The system should facilitate acceptance, rejection or return of goods against a Purchase Order.
5. The envisaged system shall generate the reports to acknowledge, and identify items mentioned in PO and print the receiving and inspection documents.
6. The system should also display the transaction report comprising of items, supplier, purchase order number, receiving date, quantity, end of life etc.
7. The system should also provide the functionality to obtain partial invoice, partial receiving and partial payment as per rules.
8. A list of Items attained “end of life” should be generated for write-off purposes and a process for write-off should be available in IFMIS Next Gen

3.7.5.4 Issue & Transfer of Goods

1. The system should allow issuance of Goods. Each item issued to an employee should be tagged with their Employee code.
2. For individual consumption, the goods shall be issued based on the online request of goods. Such form will have the record of request number, transaction details, issuance type which shall usually consist of items used for administrative purposes and are necessary in day to day office work like stationery, furniture, etc. The issued goods(Perishable Item) shall be recorded in the Asset Register
3. The system shall also capture the no dues at the time of employee exit,
4. The system should allow the transfer of requesting goods which shall be authorized by the Competent Authority.
5. In case of theft, loss or damage, the details of the item should be updated accordingly

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3.7.5.5 Physical Verification & Inventory Management

1. The system should allow the physical verification of the stores by providing or allowing the option to tag any missing item or excess items in the inventory.
2. The relevant users should be notified of such observations for necessary remediation.
3. The system should provide the functionality for intra department transfer, inter department transfer, transfer to project, etc.
4. The system should provide functionality to write off the items after approval from the Competent Authority.

3.7.5.6 Financial Sanction

1. The system should have the facility to generate Financial Sanction by selecting corresponding Administrative Approval IDs which shall be populated from the relevant database
2. The system should allow the Competent Authority to modify the FS amount and issue sanctions for a lower amount as compared to the Admin Sanction
3. The system should allow creation of more than one FS for a single Admin Sanction.

A unified dashboard should be made available to capture the information and analysis on parameters like – Purchase Summary Report, Requisition Status, Financial Sanction, Open POs, Physical verification status, Department wise Purchases and Financial sanctions, Office wise Spend analysis etc. The reports should present historical, statistical, and predictive views in addition to the daily/weekly/monthly views.

3.7.6 Strong Room



Figure 19: Strong Room

The Strong room module in IFMIS Next Gen should maintain records of valuables deposited by various Departments in Treasuries. Apart from this, the module should cater to preparing indents for stamps procurement, storage of exam papers etc. The category of items typically stored in the Strong Room include padlocks, valuables, departmental chest, stamps, cheques, money receipt books etc. A number of these items are defunct and no longer in use. At a high level, the following process interventions are envisaged in IFMIS Next Gen –

- a. Access to the Strong Room module should be enabled for authorized users of Departments.
- b. The envisaged system should allow Departments to send a request to the concerned Treasury for depositing a valuable.

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- c. The envisaged system should allow the Department enter the details of the valuable to be deposited.
- d. On receipt of valuables, the system should also generate a QR code/ Bar code. This QR/ Bar code may be used later for auditing, issuance, verification purposes.
- e. A notification for re-packing shall be sent to the Department as per prevailing rules. In case the original package is damaged, the system shall allow the Treasury user to notify the Department accordingly. The envisaged system should allow capturing of the details of re-packing.

The key functionalities to be enabled in the envisaged Strong Room module are listed below:

- Storage of Valuables/packets

Departments can deposit their valuables and packets with approval from competent authority addressed to the treasury and can collect the deposited article from Strong Room only after a return requisition is raised within this module.

- Procurement, Issuance & Transfer

Treasury maintains the stock of various stamp types. This module tracks stamp procurement from Government Press, issuing of stamps to vendor/public/others and transfer of stamps within treasuries only after approval from competent authority(s).

Treasury procures cheque books/ money receipt books and maintains the stock of different types of cheque books/ money receipt books. The cheque books can be issued to different DDOs of PWD/NVDA, Irrigation, PHE, forest and deposit account holders and disbursement offices for printing of cheques wherever net banking is not possible.

The key functionalities of the envisaged Strong Room module are defined below –

3.7.6.1 Storage of Valuables/packets

1. Valuables/packets shall be deposited along with approval from Competent authority by the deposit agency. In case of Semi/Quasi Government Agencies deposit fees are charged. The system should have provision to handle payment through online challans.
2. The system should allow sending of online requests for depositing the valuables.
3. The system should allow the user to verify and approve the request.
4. The system should acknowledge the receipt of articles after inspection and validation of articles. Any observation from the inspection should be recorded in IFMIS Next Gen. The envisaged system should allow generation of relevant certificates for charge giving/ certification from Collector/ Treasury Officer.
5. The envisaged system should enable capturing of Guarantee/Security deposit of Cashier working in Strong Room of Treasury and signing of affidavit. The templated affidavit should be available in the system and the affidavit should be generated online.

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6. The system should record profile parameters of received valuables like end of life, renewal, validity etc. and should provide a recommendation either to replace or extend the life of valuables/packets/articles at-least 6 months before the deadline or otherwise as per MPTC rules)
7. The system should generate a unique serial number for all valuables.
8. The system should allow the user to approve the deposit of valuables and this approved request shall be available in the work list of the Treasury official. The Treasury official shall mark it as stored in the double lock of the strong room after physically placing the same in the Strong Room.
9. The envisaged system should allow the valuable to be collected from Strong Room only after a return requisition is raised and the messenger is specified with associated approvals/ sanctions.
10. In case of Semi/Quasi Government Agencies, the system shall capture the challan details at the time of capturing deposit fee details. The system should allow the user to verify the valuables, payment details and forward for approval.
11. The validity of valuables deposited should be maintained in the system and relevant notifications should be issued.
12. The system should have provision to verify the messenger details during deposit/withdrawal of valuable packets
13. The system should also allow the user to approve more than one valuable at a time in the available work list of valuable deposit requests.
14. The envisaged system should generate an acknowledgement receipt of deposited valuable which should be sent to the registered email ID of the Depositing Agency/ Department.
15. At the time of re-packing, the depositing agency/department visits the strong room with a letter from Competent Authority for repacking. The approved letter shall be uploaded to IFMIS Next Gen along with the re-packing request.
16. The envisaged system should also allow updation of status of stored valuable/packets.
17. The system should have provision to flag and generate reports for perishable and non-perishable items separately.
18. Relevant validations should be enabled in the system as per prevailing rules.

3.7.6.2 Procurement, Issuance & Transfer

A. Stamps

1. The system should allow Authorized Users to define a minimum stock inventory threshold. Once the threshold is breached, the system should trigger a notification to respective Treasuries to reorder.

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2. The system should have provision to display the list of available stock at the time of indent preparation.
3. Once the indent preparation is approved by the Stamp Approver, the system should also have provision to display the approved indent details to Stamp Treasurer/Depot Treasurer for double lock to single lock against indent.
4. System will have provision for Vendors/Public/others to purchase Stamps from Treasury by making payment through the receipts module as defined in section 3.5.
5. System will prompt for upload of required documents for verification.
6. The system should also have the provision of displaying the utilisation trend of stamps based on past year.
7. The system should allow raising an indent for stamps and its consolidation at the Nodal treasury office.
8. The system should maintain stock records of stamp paper - number wise, denomination wise etc. The system should also allow the user to check the stamp stock online and allocate/ freeze the stamp stock for a particular vendor. In case of suspension of vendor by Registrar of Stamps, the Registrar will have access to vendor portal for suspension (deactivation of vendor license and for activation also) through APIs.
9. The system should be capable of verifying the stock of the vendor and in case a vendor has sufficient stock of the required (indented) stamps then the request (indented value) may be modified or rejected by the Treasurer. The stock can be tracked using the historical records for the vendor.
10. The system should display the Challan Number, while issuing the stamp.
11. System should provide an acknowledgement receipt to ensure no duplicate entries are fed while stamp issuing
12. The system should have the facility to edit/rectify the incorrect challan indent for stamp
13. Once the proof of payment submitted by the vendor/public/others is verified (i.e. the payment done has been accounted for in the state receipt account), process of double lock to single lock will be followed for stamp sale to vendor/public/others.
14. Based on the selected challan and the transfer of stamps from double lock to single lock, the system should allow the issuer to issue stamps from single lock to vendor/public/others for disbursement as per challan/indent details.
15. The system should allow to capture of stamp invoice details.
16. Depot Treasury should have an option to monitor stock across all the treasuries and can decide either to raise an indent or facilitate transfer of stocks between treasuries.
17. The system should be able to generate a unique ID for stamp distribution.

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18. The system should be able to manage stamps inventory at the individual strong rooms and also equipped with the following features -

- Prompting for indent requisition.
- Maintenance of minimum stock level based on the seasonal sales of stamps.
- Treasury wise stamp sale management
- Inter treasury transfers (Transfer of stamps papers should be allowed from Depot to Treasury, Treasury to Treasury, Treasury to Depot under same division)

B. Cheque Book & Money Receipt Book

1. The system should be capable of preparing and approving the indent prepared for procurement, cheque books/money receipt books to be issued to the Division office of PWD/NVDA/ PHE, Irrigation, forest department as well as PD/ED account holders and Disbursement office for payment processing.
2. The system should allow authorized users to set the minimum/maximum stock of money receipt book and different types of cheque books for each treasury based on which alerts should be generated for procurement.
3. The system should provide the functionality to user for displaying the work list in strong module.
4. The system should allow the user to raise a request to destroy the damaged cheque books/money receipt book
5. Transfer of MRB should be allowed from Depot to Treasury, Treasury to Treasury, Treasury to Depot under same division

3.7.6.3 Indicative MIS Requirements for the process

1. System should provide a consolidated dashboard to TOs to view the Strong Room items and valuables, their ageing, repacking dates etc.
2. System should allow authorized users to generate and schedule various reports like the following –
 - a. Stamps Inventory and Ageing Report (unused report, single lock and double lock and past 3 years)
 - b. Treasury/Agency/Department wise stamps Requisitions and Ageing
 - c. District wise, Treasury wise, Financial year wise, Month wise Sale of Government Stamps and others
 - d. Valuables Register Report
 - e. Cheque/Money Receipt Book Issue Register -Single report with LOV MRB Amount with count

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- f. Procurement of Stamp by Depot Treasury Report
- g. Double Lock Summary Lock Report
- h. Stamp Plus-Minus Memo
- i. Treasury wise Stamp issue stock register
- j. Vendor wise Sale of Stamp & Discount
- k. Treasury wise Discount Summary
- l. Destroy of damaged stamp, Cheque and MRB

3.7.7 Works Management System Integration

State Departments like PWD and Irrigation have their own Works Management System. The envisioned IFMIS Next Gen should integrated with the Works Management Systems of these Departments. The overall functionalities of Works Management System Integration (WMSI) is as follows –



Figure 20: Works Management System Integration (WMSI)

This module should facilitate the project's financial and contracting visibility. Departments should be able to perform all the Works/Project related activities like Work Requisition, Work Estimation, Technical Sanction, Administrative Sanction, Tender & Work Agreement, Inspections, Work Completion etc. from their respective systems. However functionalities such as financial sanctions, contracting, payments and budget management shall be addressed using IFMIS Next Gen.

The key functionalities are listed below –

- Financial Sanction: The Financial Sanction for a Project limits the fund disbursement within the thresholds of funds allocated and released for the current FY against pre-defined HoAs.
- Contracting: This functionality will allow creation of a unique Work ID or multiple Work IDs against a contract.
- Report: This functionality will allow generation of multiple reports

3.7.7.1 Financial Sanction/ Payment Sanction Order

1. The system should provide the functionality to generate Financial Sanctions/ Payment Sanction Order by selecting corresponding Administrative Approval IDs which shall be populated from the project database and database of administrative sanctions. Details of administrative sanctions will be obtained through integration with the Works Management System of the Works Department.
2. This functionality is envisaged to facilitate the generation of financial sanction order within system and make them available to concerned HoO in real time.

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3. The system should have the facility to generate Work ID, Unique Sanction ID for the Sanction Amount
4. The system should have the facility to create request for Draft Sanction Order by entering the details like Sanction type, Work ID, Employee Type, Sanction Sub-Type, Sanctioning Authority Level, Purpose of the Sanction, sanctioning department. HoA for expenditure booking, Demand number., signatory, sanction amount, total etc.
5. The system should facilitate to forward the approved Sanction order generated in IFMIS to issuing Authority for Signature.
6. Each Sanction in the envisaged system shall have a unique ID and the revised sanction should refer to original sanction order
7. The payment sanction process would be similar to the process defined in section 3.7.3.
8. The system should provide interface for Works bill creator to raise a request to refund the withheld royalty amount and process to claim it.
9. The system should provide interface for Works bill creator to raise a request to refund the Security Deposit amount which shall further provide facility to claim the amount that was initially kept as a security

3.7.7.2 Contracting & Work ID

- It is envisioned that the process of administrative sanction and DPR approvals be carried out by the respective Departmental systems. Envisaged IFMIS shall provide an option to Department users to upload the Administrative Sanction and map the work ID so that budget lines can be mapped, and bills can be generated accordingly. The financial year and plan details should also be available along with the expenditure amount in Work ID master.
- The system should also provide interface to record the details of approved tender
- The envisaged system shall facilitate the contracting works department to create/upload work order, which shall be recorded as a contract.
- The envisaged system should also allow the contractor/DDO to enter contract details, like contract name, value etc. and send it for approval. This will be through the vendor portal.
- The envisaged system shall allow the vendor/ contractor to submit their claims through the vendor portal.
- The payment will be routed through expenditure module.
- The system should provide interface for self drawing DDOs to revise the details in the existing contract ID to make changes in the contract amount, mark-out date and contract period for particular contract IDs

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- The system should provide interface for BCO verifier to verify the changes in contract ID made by the self drawing DDO and forward the request for approval.
- The system should provide interface for BCO approver to approve the request of revised contract ID and to generate and track bills against it.

3.7.7.3 Reports

- a. A unified dashboard shall be enabled in IFMIS Next Gen
- b. The system shall provide reports pertaining to project details like Project number, department executing the project, project costing details, project manager, invoice details etc.
- c. The system should allow generation of a Contractor/ Vendor statement which shall be used for reviewing contractor wise details like contract awarded, contract invoice and invoice details.
- d. The envisaged system shall have provision to enlist invoice details for each contract awarded to Contractor. The invoice details shall include invoice line and invoice amount distribution across multiple heads.
- e. The system shall also provide information on head structure wise tax deductions for each contractor and tax deduction for specific month and year.
- f. The system shall also list the allotted budget and expenditure incurred under budget heads for different departments for a particular month.
- g. Apart from the above, the envisaged system should enable other reports as finalized in consultation with CTA.
- h. Other reporting requirements as per section 3.12.4.

3.7.8 SNA

As per the directions circulated by the PFMS Division, Department of Expenditure, Ministry of Finance, Government of India, through the Office Memorandum dated 13 July 2023 (and subsequent OM's, Circulars) to develop of SNA -SPARSH system for "Just-in-Time" release of Centrally Sponsored Schemes (CSS) funds through e- Kuber platform of Reserve Bank of India (RBI). The SI will be required to develop SNA Sparsh as per the functionalities given in the OM dated 13 July 23 and subsequent circulars & OM's issued by Government from time to time. The system will be required to develop in consultation with the stakeholders such as PFMS (GoI), RBI etc. SI is also required to ensure seamless integration with the Public Financial Management System (PFMS) and RBI's e-Kuber platform for real-time fund transfer of funds and monitoring and to develop interoperability protocols to enable data exchange between the IFMIS Next Gen, PFMS, and e-Kuber, ensuring consistency and accuracy of financial data.

Kindly also note that SNA like model for 100% state government funded schemes also to be developed in the same manner.

The following is an high level list of activities that will be required to be performed by the SI (the list is not exhaustive):

1. Initial Assessment and Planning

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- **Needs Assessment:** Conduct a comprehensive needs assessment to understand the specific requirements of the Central Government & State Government, identify any gaps in the current financial management processes.
- **Stakeholder Engagement:** Engage with key stakeholders, including PFMS division (GOI), RBI, Finance Department, MP Treasury, and line ministries, to gather input and ensure their needs are addressed in the IFMIS design.

2. System Design and Customization

- **Functional Requirements:** Define the functional requirements of the MP IFMIS, including budget preparation, execution, accounting, reporting, and audit functionalities.
- **Development & Customization:** Develop and Customize the MP IFMIS to align with the State's financial management processes and regulatory requirements. This includes configuring the chart of accounts, budget classifications, and reporting formats.

3. Integration with PFMS and e-Kuber

- **Data Integration:** Ensure seamless integration of the MP IFMIS with the Public Financial Management System (PFMS) and RBI's e-Kuber platform for real-time fund transfer of funds and monitoring.
- **Interoperability:** Develop interoperability protocols to enable data exchange between the MP IFMIS, PFMS, and e-Kuber, ensuring consistency and accuracy of financial data.

4. Infrastructure and Security

- **IT Infrastructure:** Set up of the necessary IT infrastructure, including servers, databases, and network components, to support the IFMIS.
- **Security Measures:** Implement robust security measures to protect financial data, including encryption, access controls, and regular security audits.

5. Training and Capacity Building

- **Training Programs:** Conduct comprehensive training programs for all users, including finance officers, accountants, and auditors, to ensure they are proficient in using the MP IFMIS.
- **User Manuals:** Develop detailed user manuals and guidelines to assist users in navigating the system and performing their tasks efficiently.

6. Pilot Testing and Rollout

- **Pilot Testing:** Conduct pilot testing of the MP IFMIS in selected departments or regions to identify any issues and make necessary adjustments.
- **Full Rollout:** Gradually roll out the IFMIS across all departments and regions, ensuring continuous support and troubleshooting during the transition period.

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7. Monitoring and Evaluation

- Performance Monitoring: Establish a monitoring framework to track the performance of the MP IFMIS and ensure it meets the desired objectives.
- Feedback Mechanism: Implement a feedback mechanism to gather user feedback and make continuous improvements to the system.

8. Compliance and Reporting

- Regulatory Compliance: Ensure the IFMIS complies with all relevant financial regulations and guidelines, including those set by the Ministry of Finance and the Reserve Bank of India.
- Reporting: Utilize MP IFMIS for regular financial reporting, providing accurate and timely information to stakeholders for decision-making.

3.8 Accounts and Audit

Given below are the key functional blocks of process and functionalities that will drive the modules under Accounts and Audit –

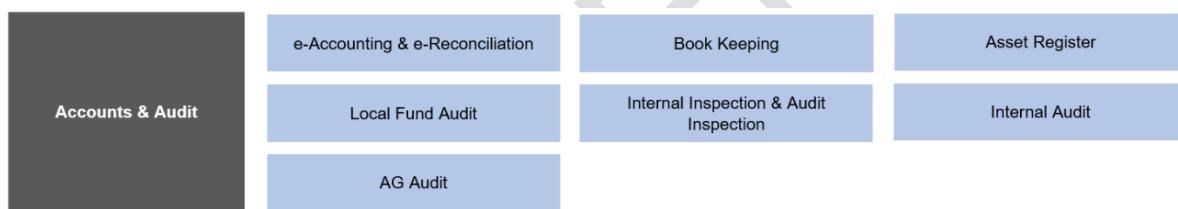


Figure 21: Accounts & Audit

Accounts

The functionalities under these modules would be used for keeping accounts and enabling reconciliation across IFMIS Next Gen and AG Office. The envisaged system should provide AG Users a unified dashboard comprising of details of accounts, grants, loans, corrections, etc. System shall be capable of supporting cash-based accounting, able to migrate to a hybrid accounting system and support for future migration to full accrual-based accounting.

Audit

Under the Finance Department based on the type of institutes and the audit type, there are two types of audit - Internal Audit and Local Fund Audit.

Internal Audit: Commissioner, Treasuries & Accounts is assigned with the responsibility of auditing State Government Departments with an objective to verify their accounts

Local Fund Audit: Department of Local Fund Audit is entrusted with the responsibility of audit of local authorities and institutes with govt grants as mentioned in Madhya Pradesh Sthaniya Nidhi Sampariksha Adhiniyam, 1973, like Urban Local Bodies, Panchayat Raj Institutions,

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Universities, Development Authorities, government -aided Schools, Agriculture Produce Marketing Committee (APMC / Krishi Upaj Mandi Samiti) etc. It performs audit and issues the certificate of utilization of grants and certify the accounts of local authorities as per the requirement of Local Fund Audit Act, 1973 and Local Fund Audit Rule, 1974.

The envisaged system should allow generation of digitized reports for audits and inspection as described in the subsequent sections. Inspection Report of Treasury should have minimum fields as mentioned in the Annexure 8 of MPTC 2020 with omission and inclusion of other fields as decided by the Competent Authority, which will be populated by the inspecting authority. System will fetch the information from the database and provide facility to record the comments of the Inspecting Authority. If any errors or discrepancies are observed, the system should allow recording of the same. The system should have provision to add additional points to the knowledge of the Inspecting Authority during inspection. System will generate a Division-wise, Treasury-wise consolidated report of these points and also provide necessary monitoring tools to view the replies sent by the inspected office.

3.8.1 E-Accounting and E-Reconciliation

The following block diagram shows the overall functionalities of the e-Accounting and e-Reconciliation module.



Figure 22: e-Accounting & e-Reconciliation

3.8.1.1 Reconciliation with AG (AG's monthly Civil Accounts and Annual Finance Account)

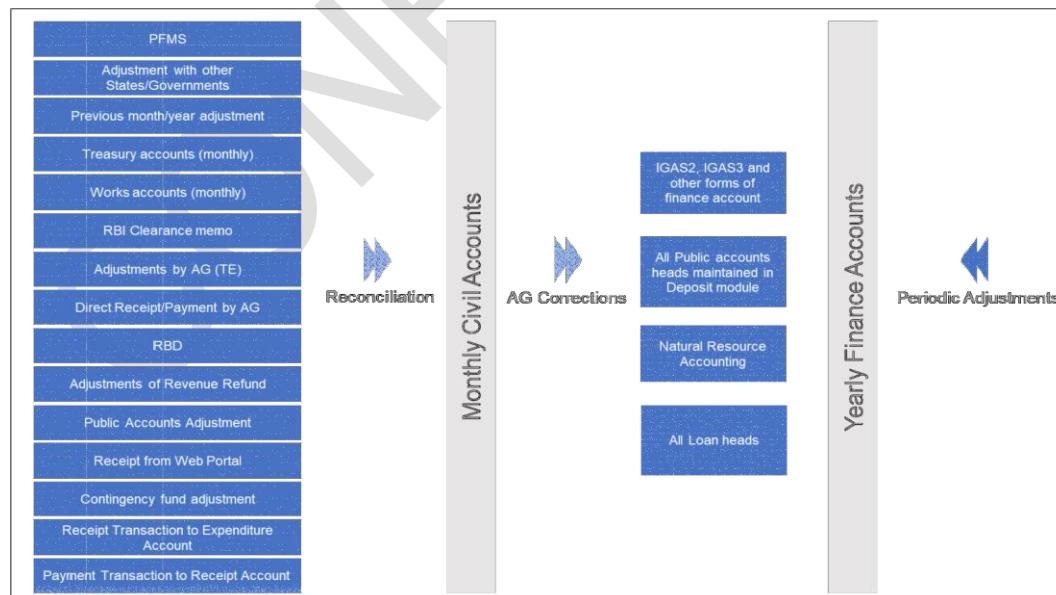


Figure 23: Overview of Accounting Process

Reconciliation is an important tool to ensure accuracy in Accounts. Currently, AG office sends the accounts data by email to CTA and CTA carries out the primary reconciliation process. At

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present, most of the treasury transactions, WDDF transactions, clearance memo are reconciled by the CTA and if there are issues in the accounts, then the details of these transactions are shared with the concerned BCOs and DDOs via the treasury. CTA gets the figures reconciled from all BCOs/ treasuries/ DDOs. It is envisaged that this exercise of updated to the accounts should be part of secondary accounts in IFMIS Next Gen. The envisaged system should provide facility for Reconciliation of expenditure figures between VLC system and IFMIS system. All BCOs shall submit "Reconciliation of expenditure certificate" to AG office within the system.

CTA also carries out primary reconciliation of transactions related to Works departments. As per Madhya Pradesh Budget Manual, BCOs are responsible for reconciliation of accounts maintained by BCOs with those appearing in AG's books and for identifying and correcting misclassifications. Accordingly, after primary reconciliation by CTA and identification of gaps, concerned BCOs are required to resolve the issues.

To facilitate the above process, IFMIS Next Gen should enable a two-way integration with AG VLC System for sharing the account data. System should compare and reconcile all the data of receipts and expenditure on the various parameters/ fields to unearth mismatches. System should send the unreconciled data to the concerned BCO/ DDO and Treasury. BCO/ DDO should be provided a facility to either accept the correction indicated by AG or submit its request to accept the original data. Decision of the AG will be final. All the changes should be the part of secondary account.

This envisaged system should provide select functionalities to the office of the Principal Accountant General and its other associated offices for creation of accounts for the state. This will include and not be limited to integration with VLC software of AG and provisioning an AG dashboard and logins for authorized users of AG office. The system should allow AG office to receive and generate monthly treasury data in prescribed formats, access requisition for corrections, reconciliation certificates from BCO for receipts and expenditures, reconciliation certificates from treasuries for PD/ED accounts and other Accounts/validation related data.

All the accounts once frozen, will be a part of the primary account and all the changes later will be the part of secondary account in the proposed system. Corrections in secondary account should be carried out at CTA/ FD level after approval by AG. Each correction should be completed through transfer entry/ negative/positive entry in the accounts maintained in the system as carried out by AG.

No changes should be allowed in either primary or secondary account once the yearly accounts are finalized by the AG. If any change is required, Requisition for Correction should be sent to AG through system and AG will capture the same in current account through Transfer Entries and show the correction in the actual year of transaction as a foot-note.

If any error is noticed in the AG accounts, then the error should be flagged to AG. The secondary account of IFMIS Next should be corrected in the same month in which AG has corrected its Civil Accounts.

Reconciliation of Secondary Monthly Account should be considered complete only if the AG data matches with IFMIS Next Gen data. Upon the completion of reconciliation, the secondary account should also be frozen in IFMIS NextGen.

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Secondary Account Reconciliation contains following type of transactions –

- Treasury Transactions
- Public Account
- Loan Account
- Cash Account
- Clearance Memo Transactions
- Works Accounts
- GST
- Transfer Entries and Adjustment by AGMP

Upon the reconciliation of all the 12 Monthly Civil Accounts, a budget line-wise report should be compiled and generated. This data will be part of Finance Account data. The key functionalities to be enabled in IFMIS Next Gen are listed below –

1. The envisaged system should provide dedicated logins for AG users.
2. Alternatively, the envisaged system should be integrated with AG accounting system. The SI shall finalize the integration mechanism in consultation with CTA and AG.
3. The envisaged system should allow generation of accounts based on IGAS standards as notified and also implement the business rule for correct accounting of Grant-in-aids.
4. The envisaged system should allow view and download of master data related to state accounts in multiple formats like Excel, csv etc.
5. The envisaged system should allow view and download of the Budget (Original/ Supplementary/ Reappropriation / Surrender) by AG through their IFMIS Next Gen logins.
6. The system should allow generation and download of various accounting reports with accurate data in multiple formats such as excel, csv etc. An indicative list of such reports is provided below-
 - a. For Payments, Subsidiary Register of Payments (SOP), List of Payments (LOP), issued cheques, paid cheques, lapsed / cancelled cheques, unpaid cheques, subsidiary registry payment, subsidiary register of Minor Head – expenditure, CIC, receipt checklist, plus-minus of cheques and VLC reports.
 - b. For Receipts, Subsidiary of Receipts (SOR) which is a date wise head wise report of receipts, Schedule of Receipts, Cash Account, Reserve Bank Deposit (RBD) - RBD AG & Internal RBD, CTR, subsidiary register of Minor Head – receipt and K-Deposit report.
 - c. For Deposits – ED, PD, CCD, LFD, SPD, K-deposit, RD, security deposit, plus minus memo, revenue repayment register, revenue register; Annexure A, B, C used for creating yearly account, HoA wise, CCD HoA wise, CCD subsidiary register,

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CCD payment/receipt, receipts payment register for PD/ED, Deposit RD/K/others plus minus memo

- d. Consolidated Treasury Receipts (CTR) for Works and Forest Department for their receipts. CTR should be generated through IFMIS along with other works accounts. This report should be generated as a certificate of total receipts of a DDO against a certain HoA.
 - e. Subsidies or grants received by the department
 - f. Other reports as finalized in consultation with CTA
7. System should allow freezing of accounts before making them available to AG users.
8. In case of correction in accounts, system should have a provision to make necessary corrections as per provisions in MPTC, only after competent authority's/AGMP approval in the system.
9. System should provide access to the Collector for digitally signing of relevant accounts as per relevant rules. Relevant notification should be sent to the Collector for the same.
10. The system should allow ease of access of accounting reports. The reports should allow ease of navigation and switching to different pages seamlessly. Relevant hyperlinks should also be enabled in the reports.
11. Currently VDMS is sent to RBI by Bank and Treasury Data is sent to AG. Then AG data and RBI data is reconciled. This should be facilitated through IFMIS Next Gen by providing access to the concerned users. The envisaged system should provide access to treasury-wise VDMS information within the system.
12. IFMIS Next Gen should allow online reconciliation and submission of Reconciliation Certificate to Pr. AG office every month.
13. IFMIS Next Gen should enable the reconciliation of Budget line wise compiled data with 13th and 14th Civil Account data of AG. This reconciled data should be used to prepare department-wise Budget Books, Finance Account, FS-Memo, FRBM, DMO, all other budget volumes and Financial Management Reports.
14. Apart from the above, the envisaged system should allow verification of transactions by TO and DDO both. At end of every month the system should auto-generate a list of all transactions to be sent to respective DDOs for verification. The system should allow the DDO to add their DSC/ e-sign the verified accounts and send back to the TO.
15. The system should allow reconciliation between each module of IFMIS Next Gen.
16. CPWA code indicates that remittances between officers rendering accounts to the same Accounts Officer shall be entered in the Schedule of Reconciliation of Cheques & Remittances in Form CPWA 51. At the end of every month, monthly settlement should be effected with all treasuries in respect of the transactions of the entire Works Division. The divisional officers will undertake reconciliation in Form-51 indicating the differences between the cheques and remittances. The form 51 should be sent to the

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AG office along with monthly accounts. The provision for generation of form 51 and enablement of corresponding business rules should be enabled in IFMIS Next Gen.

17. The envisaged system should enable generation of various accounts formats as per relevant rules and acts, in consultation with concerned stakeholders.
18. The envisaged system should allow AG to generate self-service reports as decided in consultation with CTA.
19. The system should be able to read the narration of the transaction and should be able to match it to the narration available with the department.

3.8.1.2 Requisition for Correction (when account is frozen)

The envisaged system should have transfer entry provisions. Before rendering of treasury accounts to AG office, “Requisition for Error” shall be submitted to Treasury by DDOs’ and after rendering Accounts to AG office, “Requisition for correction” shall be submitted to AG office by treasuries. Whole process should be in the system under By transfer Tab. Once approved by AG office, treasury may make changes in IFMIS and the same be recorded in trail.

- 1 Process for accounts corrections before accounts submitted to AG should be enabled in IFMIS Next Gen as illustrated below –
 - In case of cyber receipts, no change should be allowed in the challan. However, refund process should be allowed.
 - In case of incorrect challan entry by treasury, system should provide the facility to delete the challan and if required, enter the correct challan. However, in case of incorrect challan entry where services are already been rendered, the system should enable the process of correction of challan entry as per the state rules in consultation with CTA.
 - In case of challan submitted in HoA 0071-00-500 incorrectly or the amount is incorrect, system will provide a process to correct this entry in AG / Treasury / CRA.
- 2 Process for accounts correction after accounts submitted to AG (before finalization of accounts by AG):
 - System should allow the user to initiate Online requisition for correction (requisition for correction with supporting documents) as per defined workflow.
 - Online correction requests (as visible in the login of AG users) approved by AG (AG will provide the details of transfer entry of correction as requested).
 - Accordingly, the envisaged system should allow corrections to be incorporated in IFMIS Next Gen after approval of AG.
 - Reports pertaining to corrections should be available

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- Text file of the Treasury monthly accounts should be available for download

3 Following are the functionalities which are envisaged in IFMIS Next-Gen

- A dedicated login in IFMIS Next Gen should be provided to AG.
- DDO can request Treasury for a change/ correction in Accounts as per state rules.
- In case of correction in accounts, system should have provision to make necessary corrections as follows:
 - If IFMIS Next Gen and AG-VLC systems are integrated:
 - Case I - DDO initiates requisition for correction. It will be sent to TO for approval. Post-TO's approval, it will be sent to AG for approval. Post AG's approval, changes will be done in both, IFMIS Next Gen and AG-VLC.
 - Case II - AG initiates correction. Facility for concurrent review of vouchers and challans by AG in IFMIS Next Gen to be made available. TO & DDO will get notified. Post DDO's/TO acceptance, changes will be done in both, IFMIS Next Gen and AG-VLC.
 - If IFMIS Next Gen and AG-VLC systems are not integrated:
 - Case I - DDO initiates requisition for correction. TO to verify the correction. Post-TO's verification, AG will do corrections in VLC system and put an VLC ID in IFMIS system. Post AG's approval in IFMIS Next Gen, changes will be done in both, IFMIS Next Gen and AG-VLC.
 - Case II - AG initiates correction. TO & DDO will get notified. Post DDO's acceptance, changes will be done in VLC then in IFMIS Next Gen by AG user.

The TO can then make the revised accounts available to AG through an SFTP server or any other mechanism as agreed with the AG. The system should automatically unfreeze the accounts upon receipt of approval for RfC from AG without the need to separately request for approval. The system should also generate alerts upon receipt of information/ approval from AG. This process should be enabled as per relevant rules. Any change in primary account can be done prior to freezing of such accounts, however post freezing, secondary accounts will be created for capturing the correction.

- The system should also allow AG user to make changes to the accounts based on the correction mentioned in the point above.
- The system should provide access to the original as well as the new accounts in case of RfC.
- Validation Report: Complete Validation (checking) of vouchers is carried on sample selected vouchers every month after closing of Monthly civil accounts. The validation report is sent to State Government to take action against the observations flagged in the report. The envisaged system should allow AG users to send these validation reports to the State Government through IFMIS Next Gen. Action taken against the observations in this report should be recorded and the concerned users should be prompted to input the same. The action taken should be visible to AG users. Validations such as cases where net amount is greater than gross amount shall be implemented in the system.

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- Accounts submitted by Treasury should be digitally signed, supporting documents like List of Payment (LOP), etc. should also be digitally signed by TO. Bills should be digitally signed by both TO & DDO. Sub-Vouchers by DDO and Beneficiary list by DDO, Sanction Order by Authorized Signatory.
- The system should not allow initiation of RfCs after AG has closed the accounts for a year.

3.8.1.3 AG Dashboard

The envisaged system should provide an AG dashboard at the AG user login for accessing and querying the required data sets which can be drilled down up to the granular level based on the access rights of the users, as agreed with CTA and AG users. These data sets may be leveraged by AG users for accounting as well as audit purposes. Dedicated user accounts should be provided to AG users for Audit and Accounts functions. The dashboards for Audit and Accounts should also be distinct, based on the end user requirements. The key features of the dashboard are stated below –

- Accounts dashboard should display various accounts related figures as per relevant rules and should also allow AG users to generate custom reports through self-service mode.
- Audit Dashboard should display details such as pendency of audit paras, pending receipt of information requested by the Audit team etc.
- The Audit dashboard should also display relevant information related to state accounts which can be queried as required during Audits. Such information may include the following at an indicative level. However this will be finalized in consultation with CTA and AG users –
 - DDO wise data of budget allotment and expenditure
 - E-payment list/payment order list in multiple formats (excel, pdf etc.)
 - Expenditure up to last unit of classification of expenditure
 - Budget allocation orders
 - Budget and expenditure for DDOs and BCOs
 - Orders related to State's matching share for centrally sponsored schemes
 - Re-appropriation orders and surrender orders
 - Orders related to release of funds by Finance department to BCOs and BCOs to DDOs
 - Details of budget lapsed for BCOs and DDOs at the end of financial year

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- Reconciliation statements of all DDOs
 - Querying bills through bill reference number of all DDOs
 - Failed transactions report
 - Status of release of allocation for any scheme
 - Details of expenditure for any scheme and the remaining amount
 - Details of Challans
 - Digitally signed vouchers.
 - All documents related to the voucher should be available at one place/menu option for ease of access
 - Revenue details
 - Financial Sanction Orders grouped across multiple parameters such as Departments
 - Utilization Certificate, Budget Allotment, and remaining amount linked to the sanctions
 - Any other data set as finalized in consultation with CTA and AG users
- The aforementioned dashboards shall be finalized in consultation with CTA and the AG users and should allow the following –
- Ability to slice and dice across multiple time periods
 - Allow configuration of new reports by end users using data elements stored in the system as per their access rights
 - Option to generate reports in multiple formats (pdf, excel etc.) based on user specific needs
 - Facility to convert the figures in lakhs, crores, thousands, actuals and other metrics as desired by the end users
 - Should have robust interactive visualisations such as graphs, charts, and histograms
 - Should have the ability to format (page size, row, columns, fonts, colours, tables etc.), allow data manipulation (slice and dice multidimensional data on the fly, pivoting, sorting, ranking, rearranging columns, etc.).

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- Should have drill-down capabilities (ability to drill down to various levels of a hierarchy)
- Should provide an easy to access and responsive search functionality in the form of an ad-hoc query tool
- Allow the authorised users to save searches and execute them at a later point in time
- Should provide an interface for users to raise a request to CTA and FD in case a data point is not available. Such requests should be auto-generated and presented to users to preview and submit

The aforementioned dashboards shall be finalized in consultation with CTA and the AG users.

3.8.2 Book-Keeping

A Book-Keeping module should be developed as part of IFMIS Next Gen for recording the financial transactions undertaken by State Government of Madhya Pradesh. The sub-modules to be developed are as follows.



Figure 24: Book Keeping

The system should be able to support preparation of primary and final accounts of the State based on the transactions undertaken by the State Government. After posting the transaction entries, the system should create a primary account in near real time or within a specified period. It should have the provision for the Finance Department and Treasury to make corrections or modify entries in the system for a stipulated period. However, these entries will be recorded as separate transaction entries and would not override or overwrite original entries. These corrective entries should be authorized to identified roles only and would be flagged in the system. At the end of the financial period, the accounts would be transferred to the Accountant General, Madhya Pradesh (AGMP). AGMP's system would have necessary integration with IFMIS Next Gen to receive the accounts. After the primary account has been received by AG, the system should not allow any more corrective entries in primary account. Thus, the primary account would be frozen for all changes. If AG decides to make any corrections, those entries would be done in AG's VLC system and updated in IFMIS Next Gen through integrations. All corrections should thereafter be made in the secondary account.

AG will create Monthly Civil Accounts and Annual Accounts of the State. After the AG accounts are created, it would be updated in IFMIS Next Gen through integration with AG VLC. The system should allow users to reconcile the bank balances between treasury cash balance and the bank reports.

The accounts will primarily receive data through transactions occurring in IFMIS. In cases where the transactions occur outside IFMIS Next Gen, these accounts would have adequate mechanism to retrieve data from relevant data sources like RBI Clearance Memo, PFMS etc.

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This can be done through relevant integrations with the stakeholders or data flow if it is available within IFMIS modules like Debt.

The book-keeping module shall have three functionalities as defined below:

- Primary Account: This refers to the accounts with records of all treasury transactions within the State
- Out of Treasury Transactions: This refers to the accounts with record of the transactions occurring outside of treasury like debt receipts, GoI transfers etc.
- Final Account: It is the monthly civil account and annual account of the State, finalized by AG

The envisaged system should have the Head of Accounts Master containing the unique head identifier of budget head classification used in Government Accounts. Whenever new budget heads are created, they should be mapped in Head of Accounts master as described in section 3.1.1.13.1.1.1.

3.8.2.1 Primary Account

In a financial period, all transactions available in the books will be used by the system to create a primary account. Within the financial period, any changes to the transactions and accounts can be done by posting correction or modification entries. However, these entries would not override or overwrite existing entries. Only designated roles will be authorized to post corrective entries and system will create a record of all such correction entries posted in the system.

1. Posting of Transactions
 - a) System should run voucher transfer and post the same automatically at a predetermined interval
 - b) System should transfer all transaction data from all other modules to the book-keeping module
 - c) After the transfer, system should post the transactions in the primary account and update the account balance
 - d) The system should provide functionality to automatically create due to/due from entries to balance transaction entries by fund, based on pre-defined rules
 - e) The transactions posted within IFMIS Next Gen from different modules should be recorded in designated accounts

2. Monthly Freezing of Primary Accounts

All Treasury Accounts and the data of the accounts must be frozen before sending them to the AG. System will freeze the monthly and annual accounts of the State after which no correction entries will be allowed to be posted without approval of AG.

3. Submission of Primary Accounts

- a) The system should allow submission of monthly accounts and final accounts after necessary approvals as per prevailing rules

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- b) Transactions posted in the primary account shall be shared with AG through integrations, post approval from the Competent Authority, as per relevant rules.
- c) System should transfer primary account data, budget head wise, from primary account maintained in IFMIS Next Gen to AG ledger through integration with VLC.

4. Adjustment Entries

In case there is any error in the Primary accounts before or after freezing of accounts, the adjustment in primary account balances will be made in the system by adjustment entries. If the primary account is not frozen, Treasury Officers and Finance Department can directly post the adjustment entries. If the accounts are frozen, a journal entry posting requisition will be sent to Accountant General though IFMIS Next Gen for approval. Upon AG's approval on the request, the adjustment journal entry posting will update both AG Accounts (through integrations) as well as State Accounts.

- a) System should allow Treasury Officers or authorized users to post adjustment journal entries if the primary account has not been frozen for updating/ correction in the accounts
- b) System should provide workflow to Treasury Officers and Finance Department users for receiving requisition approval and Accountant General for posting adjustment entries
- c) Once both approvals are received, system should allow user to post adjustment entries against the approval
- d) If the adjustment is required by AG, they can post changes in IFMIS Next Gen directly by posting AG adjustment entries. System should capture AG adjustment entries and update State Accounts as well as AG Account through VLC integration

5. Freezing of Monthly Account

Once the Monthly accounts are rendered by treasuries, the envisaged system should not allow receiving input from the users. If necessary, the required correction should be made only by transfer entries

6. Annual Freezing of Final Account

- a) System should provide functionality to CTA user for requesting AG for freezing of accounts
- b) System should allow AG user to freeze Annual Accounts of the State
- c) Annual Account report pertaining to Re-appropriation/Surrender including grant wise details with reasons, should be generated in IFMIS Next Gen in multiple formats

3.8.2.2 Out of Treasury Transactions

IFMIS will retrieve out of treasury transactions like debt, investments, transfers from Government of India from appropriate databases. These transactions might be available in other modules of IFMIS Next Gen or might be available from external data sources like RBI

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Clearance Memo, AG Accounts etc. Appropriate integration with these external data sources must be envisaged to retrieve this data and update it in IFMIS Next Gen.

1. Interface Entries

- a. System will fetch accounts data from Cash and Debt Management module to AG Ledger as an unposted accounting transfer entry
- b. System will post the entries to update account balance in AG Ledger through integration

2. Manual Entries

- a. System will allow user to create adjustment entries
- b. System will have workflow for approval of adjustment entries
- c. System will post the entries after approval is received, to update the account balance

3. Transfer Entries

- a. The envisaged system should have transfer entry provisions. Before rendering of treasury accounts to AG office, "Requisition for Error" shall be submitted to Treasury by DDOs' and after rendering Accounts to AG office, "Requisition for correction" shall be submitted to AG office by treasuries. Whole process should be in the system under By transfer Tab. Once approved by AG office, treasury may make changes in IFMIS and the same be recorded in trail.
- b. System will allow user to create transfer entries by entering account information
- c. System will have workflow for approval of transfer entries
- d. System will post the transfer entries after approval is received, to update the account balance

3.8.2.3 Final Account

When Accountant General finalizes monthly and annual accounts, it will be uploaded in the system through integration with the AG VLC system.

3.8.3 Asset Register

IFMIS Next Gen should allow recording of asset purchases like land, buildings, machinery etc by the State Government. This asset register will be updated whenever a new asset is recognized in any module of IFMIS Next Gen. The asset register should also capture the useful life. The asset register should capture details of works completed after issuance of their completion certificate through integration with the Works Management system. A record of such assets should be maintained as part of the Asset register. After the asset has completed its useful life or in the case of write off, the system would record it for future analysis and audit requirements. The geographical coordinates of every asset created should also be recorded. Asset register will have the following functionality –

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Figure 25: Asset Register

- **Asset Recording:** System shall capture any new asset that is acquired or created by the state government
- **Asset Maintenance:** System shall capture any change details of the asset
- **Asset Retirement:** System shall capture disposal of asset at the end-of-life.

The asset data will be useful in making purchase decisions of new assets as well as ensuring optimal usage of new assets. It will also be beneficial in case government decides to shift to accrual accounting in future.

3.8.3.1 Asset Recording

Assets will be recorded in the system whenever there is commencement of asset creation, vendor invoice, asset purchase, public assets or through donations and leasing, and a unique Asset ID should be generated. Alternatively, the system should also enable Authorized users to input valid details of assets through a secure login. The access should be restricted and enabled on request.

1. Works Assets

- i. The asset register should capture details of works completed after issuance of their completion certificate and handover of the asset through integration with the Works Management system. A record of such assets should be maintained as part of the Asset register.
- ii. Administrative Department DDO will create an asset in Asset Register when the vendor raises the bill
- iii. System should capture the invoice details in the asset register and prompt the administrative department to update asset details
- iv. System should allow administrative department user to enter details on useful life, expected end-of-life value etc. and submit for approval
- v. System should receive approval from designated authority and update the asset in asset register

2. Asset Purchase

- i. Administrative Department user may create purchase request in the Purchase and Inventory module and procure the asset
- ii. In such a case, the asset detail will be added to Asset Registry in IFMIS Next Gen
- iii. System should capture the invoice details in the asset register and prompt the administrative department to update asset details
- iv. System should allow administrative department user to enter details on useful life, expected end-of-life value etc. and submit for approval
- v. System should receive approval from designated authority and update the asset in asset register

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3. Project Assets

- i. System will provide functionality to Administrative Departments user to add assets which are planned for creation in capital projects like buildings, installations etc.
- ii. System will allow administrative department user to enter details of planned asset for useful life, expected end-of-life value etc. and submit for approval
- iii. System will receive approval from designated authority and update the asset in asset register
- iv. System will provide functionality to administrative department user to change the asset to completed and seek approval when the asset creation is completed.
- v. System will receive approval from designated authority and update the asset in asset register

4. Assets donated and PPP assets

- i. System will allow administrative department users to enter details of any assets that are donated or created in PPP projects.
- ii. System will allow administrative department user to enter details on useful life, , expected end-of-life value etc. and submit for approval
- iii. System will receive approval from designated authority and update the asset in asset register.

3.8.3.2 Asset Maintenance

Asset maintenance functionality will enable the user to change asset details.

- i. System should allow the user to change following indicative details –
 - a. Category of asset clearly highlighting the nature of the asset (movable or immovable) and the type (building, road etc.)
 - b. Asset location
 - c. Employee assigned
 - d. Asset value
 - e. Useful life
 - f. Associated expenditure details
- ii. System should allow the administrative department user to submit changes for approval
- iii. System should receive approval from designated authority and update the asset in asset register
- iv. The system should be enabled with relevant rules of GoMP related to Asset maintenance.
- v. System should allow user to update asset details in case of transfers.

3.8.3.3 Asset Write Off

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Asset retirement will be done in case of write-off and disposal as applicable, loss, steal or unserviceable condition of the asset.

- i. System should allow user functionality to submit request for write off of asset on order from Competent Authority
- ii. System should allow administrative department user to submit asset write off for approval
- iii. System approver will verify useful life, asset condition and other relevant details of the asset
- iv. System should receive approval from designated authority and update the asset in asset register for write off
- v. The auction process of the asset will be done offline [Out of IFMIS NextGen]
- vi. System should allow user functionality record proceeds received from auction and seek approval.
- vii. System will receive approval from designated authority and update the asset in asset register.
- viii. System should provide the functionality to record the dismantle the asset after the useful life of the asset.

3.8.4 Local Fund Audit

The overall working of Local Fund Audit shall be divided into four types of audits as follows. IFMIS Next Gen should enable these audits.

1. Pre Audit / Concurrent Audit

- Resident and Concurrent audit is conducted for the day-to-day audit of the institutes.
- In Resident audit unless the bill is pre-checked/ pre audit and passed no payment is done from the local Body account and the income of the institutes is reviewed. In Concurrent audit, bills are audited within the same financial year after the payment is done by institutions.

2. Post Audit

This audit is planned/conducted after the end of the financial year for the local bodies. In post audit, auditor checks expenditure and receipts of the local bodies.

3. Special Audit

- This is planned if a request for audit is received from Administrative Department of the institute.
- Approval for special audit is provided by the Finance Department/DLFA
- It is conducted to check expenditure and receipts of the institutes/ schemes as directed by the state govt. The rate of audit fee is three times to the normal audit fee rate @ defined by the state govt. from time to time.

4. Performance Audit

- Performance Audit is an audit of a specific programme/scheme or development plan implemented by the auditee. This audit is carried out to evaluate whether the programme/plan/scheme is successful across all defined parameters such as financial viability, effectiveness and efficiency.

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Essential- The complete process of audit planning, execution and monitoring will be enabled in IFMIS Next Gen. IFMIS Next Gen shall also provide integration with the auditees for receiving the audit plan, uploading the requisite documents, receiving and replying to audit paras, submitting compliances on pending paras, etc.
LFA may be viewed as follows.

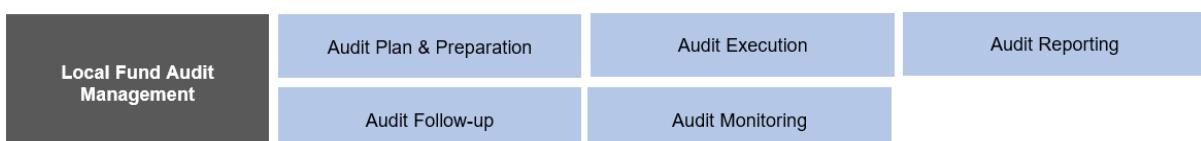


Figure: Local Fund Audit Management

The following section describes the different set of functionalities to be enabled in IFMIS Next Gen at each stage of the audit life cycle for Local Fund Audit –

1. Audit Planning and Preparation

a. Selection of units to be audited using risk-based approach

- Selection of units to be audited should be done through a risk-based approach, the algorithm for which should be configured in IFMIS Next Gen. An algorithm to classify units into high, medium, and low risk should be devised by the SI in consultation with DLFA. This will help the audit party in conducting audit as per the nature of the risk profile of the auditee unit.
- The system should allow designated users to configure parameters for risk analysis
- Risk assessment should be carried out once in five years (or otherwise as agreed with DLFA) based on the overall score of the auditee units as per the defined parameters (financial as well as non-financial) in the system.
- In addition to risk profile, a selection system based on audit pendency be developed to select institutes to be audited.

b. Resource allocation

- A team of Senior Auditor (SA) and Assistant Auditor (AA) and/or independent SA/AA be created to form an audit party. Basic tenets like transfers, minimum required person/man days per unit per year, non-repetition of auditee institute, and background, previous experience, skillset, of auditor etc. should be considered by the system while suggesting an audit party.
- The available man-days of Senior Auditors and Assistant Auditors should be divided as per the requirement for auditing of all the institutes as approved by DLFA, on submission of the same from the Regional Office (RO). This information should be visible to RO for making audit plans.
- The system should assist the user in mapping audit parties to audit units considering different parameters as described in point above
- Post the mapping, system should generate a draft plan at RO level which will be reviewed/approved by DLFA.

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- The system should provide an option to authorized users to update the audit plan, if need be
- c. Man-days to be allotted for audit of units
- Allotment of man - days for audit of units should be based on the type of units (Gram Panchayats, Municipal Corporation etc.) and the risk assessment (low, medium, and high)
 - Number of man-days for each type of auditee unit based on the risk rating should be pre-fed into the system. The system should automatically allocate number of working days for auditee unit based on the type of unit and their risk rating.
 - The system should have provision to effectively manage/surrender man-days or request for more man-days as required by the audit party. Prior approval from the competent authority should be taken in case, extra man-days are required.
- d. Preparation of annual audit calendar
- The system should have the provision for calendar preparation (based on audit plan) encapsulating information like name of the auditee units, audit party in-charge, man days allotted, risk profile of auditee, etc.
 - The system should have the provision to obtain approval of Annual Audit calendar by the competent authority.
- e. Preparation of specific Documents for Conducting Audit
- The system should have the option to Notify Auditees to prepare and upload documents in the system as a reference to the Audit party. The system should have the option to upload further documents, if requested by the auditor.
 - The system should provide checklists (based on prevailing rules of the state) for conducting audits of different types of local bodies. Based on these checklists Auditee institutions should be allowed to accept the intimation of audit and provide such documents
 - The system should have a separate section to upload relevant acts, rules and circulars of all types of auditee institutions / local bodies.
- f. Communication of calendar to audit units and audit parties
- Audit Parties and Auditee units should be intimated about the dates of audit through system generated emails and notifications/ integrations
 - The unit under audit should accept / reject the intimation or should request for reschedule of audit. In case of rejection, RO can accept the rejection and system will allot next unit to the concerned party. However, if RO finds that the cause of rejection of intimation is not proper, then RO will instruct the auditee unit to get the approval of its next higher authority for rescheduling of audit.

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- Reminders should be generated in case of an overlooked intimation.

g. Preparation of Audit

- After receiving the information about the audit dates, audit party will commence its preparation for audit execution.
- Before proceeding to audit execution, audit party in-charge should prepare Audit Planning Memorandum⁴ in the system.
- Audit Planning Memorandum will have pre-configured check points for audit and documentation.

2. Audit Execution

After the planning and preparation stage, this stage ensures the smooth execution of the audit plan in accordance with the designed strategy. It includes field/physical visit for conducting the audit. Following are the processes involved in this stage which should be enabled in IFMIS Next Gen

a. Opening meeting

- Audit party should capture the minutes of the opening meeting which should be uploaded in the system after the consent of the auditee.

b. Revision in Audit Planning Checklist

- In case of any revision in the execution strategy after the opening meeting, revision of audit planning checklist should be allowed for authorized users in the system.
- System should also maintain the audit trail of all the revisions made in the Audit Planning Checklist

c. Work Distribution among the audit party members

- The system should have the provision for work allocation along with the timelines for audit party members.
- The system will have pre – configured duties and rights for each level of auditors and supervisors.

d. Selection of Transactions for Review

- Audit party will carry out review of transactions incurred during the allocated audit plan period which involves examination of transactions along with their supporting documents to examine the audit assertions as per standard rules.
- SI shall explore the possibility of integrating IFMIS Next Gen with the Auditee institute's system. The Auditee institute will make the required reports available in IFMIS Next Gen for review. The envisaged system should have a feature to select the transaction/ report to be audited based on certain predefined

⁴At the end of preparation phase, Audit Planning Memorandum should be prepared which should capture details like scope of audit, nature, timing of audit procedure along with the summary of overall strategy of audit execution

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parameters and generate the cumulative list of sample transactions to be audited.

- If there is no integration between software of auditee institute and IFMIS Next Gen, the audit party will do the above mentioned activities outside of IFMIS Next Gen and upload the observation in IFMIS Next Gen.

e. Maintenance of Daily Diary

- The envisaged system should have the template for the daily diary, which will be finalized in consultation with DLFA
- Audit party members should maintain an online daily diary which should be updated at the end of every week. The diary should encapsulate information based on the activities performed against the work assigned to them. All entries in the daily diary of each member should be acknowledged online by the audit party in-charge.
- The audit party in charge should review the daily diary. System should generate the summary of the work done/activities performed.
- After approval of the supervisor, the diary should be visible at RO level.

f. Issuance of Audit memo

- Audit party might come across various issues/findings for which a clarification from the auditee unit is sought in form of an audit memo
- The audit memo should be issued through the system in case of clarification or non-receipt of information / documents from the audit unit.
- In case of delays in the response, auditee unit should be notified and record of responses should be maintained in the system.
- System should have provision to generate a statement of Audit memos issued and replies/action taken on those memos during the audit.

g. Requisition for Records

- The system should have an inbuilt format for requisition according to section 6 of LFA Act 1973.
- System should have alert facility to cater to non-compliances of requisition for documents. The system should have a pre-defined timeline for taking action at each stage of requisition.

3. Audit Reporting

The Audit reporting starts after completion of audit execution where audit party compiles the observations recorded during the execution stage. The process includes the following –

a. Drafting of Audit report

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- The envisaged system should have the functionality where auditee units can submit their responses to individual audit memos along with supporting documents. Audit party in-charge can view the memo-response submitted by auditee units and decide whether to drop the memo or convert the same to a para.
- Post compilation of audit paras, system should generate the audit report and the same should be available for review by the competent authority.
- The report should be available in IFMIS Next Gen, providing information on how many memos have been replied to, by the auditee and how many are pending
- The compliance report on replies to audit memo and their acceptance/ rejection should be displayed in IFMIS Next Gen.
- The system should have provision to generate monthly(can be deleted) audit fee report and system should calculate it automatically as per the order issued by the finance department.

b. Format of Audit report

- The system should have pre-fed audit report template in the sequence and manner described in LFA Rules 1974.
- The system should have facility to generate and compile Audit Paras in the form of a report on the basis of headings of paras, create audit para bank, audit para statement for each unit/financial year/type of audit para.

c. Approval of Audit Report

Audit report will be approved by RO or DLFA, as per the notification of Finance Department. The workflow should be enabled in the system.

4. Audit Report Follow up

Audit report follow up starts after issuance of the audit report. The process includes sending of compliance by the auditee unit against each para to the DLFA, resolving of backlogs in the audit paras. The system should enable this functionality.

- Compliance by Auditee Unit: The envisaged system should have the provision that auditee unit can submit audit para wise compliance through the system. Authorised user at RO can verify the received response and take necessary action like settle the para or ask for further clarification in the system itself.
- The system should allow submission of audit compliance by the auditee institutes, both through a web-based form as well as uploading a document in a pre-defined template. The system should be able to generate compliance reports using these inputs.
- The system will have facility to store audit para, according to para type as described in audit report template. It should have facility to update itself as and when any of the para is deleted / dropped/reframed

5. Audit Monitoring

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- a. Monthly Progress and Performance Report
 - The system should have the provision to generate monthly progress and performance report in the system and the same should be forwarded every month to the DLFA.
- b. The system should generate audit para wise reports, auditee institute wise reports and region-wise audit reports. district wise audit reports etc. Reports and Dashboards
 - A unified dashboard should be prepared for Local Fund Audit to capture the detailed information and analysis on parameters like - number of registered auditors & auditees, number of audit plans created, number of observations recorded, type of observation, audit reports generated, audit para, income and expenditure of the auditee units, risk analysed rank of institute and auditors' performance etc.
 - Some key templates shall be audit pendency, completed audits and running audits of various institutions. The SI shall finalize these reports in consultation with DLFA
 - There should be add-on provision for additional functionality.
 - The master database for an institute should be updated as and when the audit report of the institute is issued by the competent authority
 - Old audit reports should be available for viewing to the respective RO, supervisor and auditor.
 - Self-service dashboard should be provided to users to generate ad-hoc reports. Reports should be available in PDF/Excel format which should be easily exported by the users.
 - The entire process should be mobile enabled app.
 - Separate report format/pre-defined template should be available for a consolidated report paras , and the compliance of consolidated report paras should be available for tabling in Vidhan Sabha.

3.8.5 Internal Inspection and Audit Inspection

- Internal Inspection: Internal Inspection involves inspection of subordinate offices of DLFA. For regional offices, the team is headed by DLFA nominated officials. This involves a thorough review of office records, work distribution, physical verification of store and attendance of employees. Inspection is a generalized form of examination to ensure efficiency in work and administration of the regional offices. The Head of Department prepares an annual plan for different ROs to be inspected at the beginning of the year. Inspection is conducted to examine office records, reports, work distribution, physical verification of stores, timely attendance of employees, etc.
- Audit Team Inspection: This process refers to the inspection by RO / DLFA, of a

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specific audit team deployed for conducting audit of an institute.

Planning, execution and monitoring of both the inspections outlined above shall be enabled in IFMIS Next Gen. The indicative requirements are provided below, which shall be finalized in consultation with CTA/DLFA.

- There is a pre-defined checklist for internal inspection and audit team inspection which should be configured in the system.
- The envisaged system should also allow for generation of inspection plan and roster.
- The envisaged system should capture the observations and report of all the inspections conducted and the compliance sent by the concerned RO / audit team.
- The system should provide an option to reply all the issues/ points raised by the inspecting team.
- The system should provide an option to the higher authority to either accept the reply or seek further clarification.
- The observations and the response/ status of response should be displayed on the dashboard of DLFA and concerned RO.

3.8.6 Internal Audit

The functionalities of Internal Audit may be described as follows.



Figure 26: Internal Audit & Inspection

The following section describes the different set of processes at each stage of the audit life cycle for Internal Audit:

1. Audit Plan and Preparation

a. Roster Creation

- The system should allow designated users to configure risk-based parameters.
- The audit plan register is prepared and verified at CTA. The system should allow generation of a draft audit plan and submit for approval to the competent authorities.
- Selection of the units to be audited based on the parameters of the risk-based approach should be done through the system. The system should be flexible

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enough to choose parameters based on which audit units can be decided. Geographical location and availability of the Auditor should also be considered while allocation of resources for audit of particular units.

- An individual roster should be generated within the system for the concerned audit unit which should be sent for approval.
- In case of any objection raised by the approver, the system should allow editing of the roster and resubmit the same. The entire approval workflow should be configured in the system.
- Additionally, creation of training roster of audit officers should be allowed in IFMIS Next Gen.
- The envisaged system should also allow generation of a customized list of Audit institutes.
- Selection of institutes from this list should be allowed for authorized users only.

b. Resource allocation

- The envisaged system should allow identification of resources to be a part of the audit team and map them to the audit roster/plan. The system should present suggestions for auditors/resources based on parameters like background, previous experience, skills and familiarity with technology etc. of the audit party. For this purpose, IFMIS Next Gen shall allow maintenance of comprehensive records for the Auditors.
- The system should assist the user in mapping audit parties/ resources to audit units.
- Post the mapping, system should generate a draft plan which will be reviewed by the Competent Authority.
- The system should also have the provision to change audit parties and audit date by authorized users

c. Person - days to be allotted for audit of units

- Allocation of minimum person - days for audit of units should be based on the type of units and the risk assessment (low, medium, and high). The system should present suggestions for allocation of person-days.
- Accordingly, minimum number of days for each type of audit unit based on the risk rating should be presented by the system.
- The system should also allow the authorized users to edit the same and send for approval.

d. Preparation of annual audit calendar

- The system should have provision for preparation of audit calendar, encapsulating information like name of the audit units, audit party in charge, man days allotted, pendency of audit etc.
- The system should have the provision to seek the approval on the audit calendar from the competent authority.

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e. Preparation of specific Documents for conducting Audit

- The system should generate audit orders and communicate it to the stakeholders.
- The envisaged system should send notifications to the auditees to prepare and upload documents (financial details⁵ of the State Departments, all schemes, acts, rules, policies etc.) in the system as a reference to the Audit party.
- System should also allow Departments (DDO/BCOs) to upload additional documents as requested by auditor.
- In case any additional document is required by the Auditor, the envisaged system should allow the Auditor to request the same through notifications to the Audit unit.

f. Communication of calendar to audit units and audit parties

- Audit Parties and Audit units should be intimated about the dates of audit through system generated letters, emails and notifications.
- Audit consent should be recorded accordingly.

g. Preparation of Audit

- After receiving the information about the audit dates, audit party will commence its preparation for audit execution.
- Before proceeding to audit execution, audit party in charge should prepare Audit Planning Memorandum⁶ in the system. The template for the same shall be configured in the system in consultation with CTA.

2. Audit Execution

After the planning and preparation stage, this stage ensures the smooth execution of the audit plan in accordance with the designed strategy. Historical data of previous audit paras should be made available prior to Audit Execution through the system. Audit execution also includes field visits for conducting the audit. Following are the processes involved in this stage –

a. Opening meeting

- Audit party should capture the minutes of the opening meeting which should be uploaded in the system after approval of the auditee unit.
- The provision to update an external VC link and redirect the user to the same should be made available in IFMIS Next Gen.

⁶At the end of preparation phase, Audit Planning Memorandum should be prepared which should capture details like scope of audit, nature, timing of audit procedure along with the summary of overall strategy of audit execution

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- Day to day work progress of audit be recorded in the system, in form of daily diary. A template for the same shall be devised by the SI and configured in the system.
- b. Revision in Audit Planning Memorandum
- In case of any revision in the execution strategy after the opening meeting, revision of Audit Planning Memorandum should be allowed in the system
 - System should also maintain the audit trail of all the revisions made in the Audit Planning Memorandum
- c. Work Distribution among the audit party members
- The system should have the provision for work allocation to the audit party members, assigning deadlines for the same and tracking the progress.
- d. Selection of Transactions for “Review of Transaction”
- Audit party will carry out review of transactions incurred during the period which involves examination of transactions and their supporting documents as per relevant audit rules and due procedure.
 - System should have the feature to select the transaction to be audited based on certain predefined parameters
 - System should allow users to generate ad-hoc reports for transactions to be reviewed.
- e. Issuance of Audit memo
- Audit party may come across various issues/findings for which a clarification from the audit unit is required in form of an audit memo
 - The audit memo should be issued through the system to receive clarification from the Audit unit.
 - In case of delays in response, audit unit should be notified and record of responses should be maintained in the system.
- f. Maintenance of Daily Diary
- The envisaged system should be equipped with a standard template for the daily diary.
 - Audit party members should maintain an online daily diary which should be updated at the end of every day. The diary should encapsulate information based on the activities performed against the work assigned to them. All entries in the daily diary of each member should be acknowledged online by the audit party in-charge.
 - The party in charge should review the daily diary. System should generate the summary of the work done/activities performed.

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3. Audit Reporting

The Audit reporting starts after completion of audit execution where audit party compiles the observations observed during the execution stage. The functionalities to be enabled in IFMIS Next Gen are provided below –

a. Drafting of Audit report

- The envisaged system should allow audit units to submit their responses to individual audit memos along with supporting documents. Audit party in-charge can view the memo-response submitted by audit units and decide whether to drop the memo or convert the same to a para. After the finalization of memos, audit party prepares and verifies the draft audit report. The report will capture the categories of the paras against which reply has been received. The system should allow review and approval of the Audit report.
- Accordingly exit meeting is organised, preferably through video conference. The envisaged system should allow recording of the attendance of Audit party members during these meetings.
- The system should allow users to send the draft report to the Competent Authority.
- The system should allow the Competent Authority to digitally sign the draft report
- The envisaged system should allow deemed approval of the report as per relevant rules.
- The system should provide an option to record comments of the Competent Authority and send the same to the other relevant users.
- System should issue periodic notification to concerned users
- System should also allow users to request for extension in the timelines for review and approval of the report. However a threshold should be configured in the system for such cases.
- Post compliance of audit memos, system should generate the audit report and the same should be visible to relevant users.
- The report should also be made available to the Department through IFMIS Next Gen.

4. Audit Follow up

Audits follow up starts after publishing the audit report. The process includes seeking compliance from the audit unit against each para, including resolving of backlogs

a. Compliance by Audit Unit

- The envisaged system should have the provision for audit units to submit audit para wise compliance through the system. The system should send periodic reminders for seeking response to the paras.
- The system should allow the authorized user to verify the received response and take necessary action like settle the para or ask for further clarification or provide suggestions/ advisory for future. All such actions should necessarily be

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recorded in the system.

5. Audit Monitoring

Audit monitoring is crucial to improve work efficiency and administration of the regional offices and the audit parties. The following functionalities should be enabled in the envisaged system –

a. Monthly Progress and Performance Report

- The system should have the provision to generate monthly progress and performance reports in the system.
- The system should allow scheduling of such reports and sending the same to the Competent Authority.

b. Reports and Dashboards

- A unified dashboard should be prepared for Internal Audit to capture the information across parameters like - year wise closed paras, no. of registered auditors & auditees, no. of audit plans created, no. of observations recorded, observations recorded severity wise, final audit reports generated, audit para, expenses of the audit units, rejection of the expenditure, ranking of institute and auditors' performance and probable expenditure etc.
- Self Service dashboard should be provided to users to generate ad-hoc reports. Reports should be available in multiple formats which should be easily exported by the users.
- The envisaged system should allow users to select specific fields and generate a custom report accordingly.
- The IFMIS mobile application should also allow Auditors to access functionalities such as upload of daily diary, audit memo, para updation etc. The mobile application should allow uploading of supporting documents as captured during the internal audit.
- For drafting of audit memo, daily diary and audit reports, popular drafting functionalities like spelling check, tabulation, calculations, etc. to be provided.

There are other types of Audits/ Inspections like Special Audit, Audit Inspection, Internal Inspection which are common for both Internal Audit and Local Fund Audit.

1) Special Audit

- It is the high priority audit process conducted directly by the Finance Department. It is conducted when irregular activity is suspected, or laws and regulations are overlooked pertaining to finances, or financial management within any Government or Semi Government organisation. A special team is established to chalk out the plan and conduct surprise visits of the selected units with the support

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of local administration.

- In the envisaged system the entire life cycle of the special audit should be enabled, as per the processes outlined mentioned in the above sections.
- This would include audit planning, memo and para generation, preparing and approval of report etc.

2) Audit Inspection

- The refer to the inspection of ongoing Audit work for different institutes as per the Audit Inspection plan. In this process Inspection team verifies the availability of audit team; documents submitted by institutes during audit, audit objections raised by the auditor to auditee institute etc.
- In the envisaged system the entire life cycle of Audit inspection should be enabled, as per the processes outlined mentioned below.

3) Internal Inspection

- Internal Inspection refers to the inspection of departments under Commissionerate. In case of Internal Audit, CTA conducts the inspection for Joint Director's offices and Treasuries. In Inspection they check the double lock, Strong room i.e., physically checking (Counting) of stamps, bill pendency status and Establishment related matters, status of response to AG paras, etc.
- The envisaged system should enable the entire life cycle of Internal inspection, as per the processes outlined mentioned below.

Following is the process description of the Audit Inspection and Internal inspection –

- Selection of the units to be audited based on the parameters of the risk-based approach should be allowed through the system.
- The system should be flexible enough to choose parameters based on which inspection units can be decided.
- An individual roster is generated for the specific unit which should be approved by the Competent Authority.
- In case of any objection raised by the approver, the system should allow authorized users to make changes in the audit roster like addition/deletion of institutes etc.
- Selection of Inspection team should be enabled in IFMIS Next Gen based on the availability of the Auditors. Details (like name and place of posting) of additional experts should also be available in the system, so that they can be selected as per their availability. The system should allow maintaining the details of such Domain Experts.
- After the selection of the Institute and the team, system should generate the inspection plan.
- After the approval of the plan the same should be communicated to the inspection team and the inspection unit
- After completion of Inspection, system should allow the team to prepare the Inspection Report along with the supporting documents will send for the approval.
- The system should allow authorized users to make changes in the report in case any

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objections are raised on the same.

- Approved Inspection report will be shared with the concerned department through the system
- The envisaged system should also generate a summary of the report and present it to relevant users

3.8.7 AG Audit

AG has developed a dedicated system - One IAAD One System (OIOS) to automate the entire Audit process (audit planning, reporting, execution and follow up). The system will encompass the following processes –

- Audit Process Management (Auditee Master, Planning, Execution, Reporting and Follow up)
- Knowledge Management System (Audit Guidance, Regulations, Standards, Checklists etc.)

This system is expected to serve as a single source of truth for the entire chain of audit activities carried out by AG. The system will also enable interfacing with the Auditee IT systems.⁷

In view of the above, the envisaged IFMIS Next Gen should also allow integration with OIOS to capture audit paras and reports, monitor closure of the same and submit Action Taken Reports (ATR) to the AG through a seamless integration mechanism. At an indicative level, following functionalities will be enabled in IFMIS Next Gen –

1. IFMIS Next Gen and OIOS integration should enable capture of intimation letter and notifications issued by the AG to Departments and display the same on their IFMIS Next Gen logins. Relevant notifications should be issued to the Department users once the intimation letter is received.
2. The envisaged system should be equipped with mechanisms to reconcile and update master data of Departments between IFMIS Next Gen and OIOS.
3. The envisaged system should notify the Internal Audit users from the Directorate at the time of audit planning in case there are any scheduling conflicts with the AG audit plan for the Department. The intimation letter shared by AG should act as one of the inputs in this regard. The system should allow users to resolve such conflicts and should not allow users to submit the plan without resolving the conflict.
4. The envisaged system should also capture dispatch enquiries from OIOS and display the request records in the Department user login as an itemized list with the deadlines for submission captured through OIOS integration. The envisaged system should also allow furnishing of responses through IFMIS Next Gen. The user can generate

⁷<http://www.agmp.nic.in/reports/OIOS.pdf>

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requisite reports, compile and send them to the AG user through IFMIS Next Gen itself. In such a case, the request should be marked as replied and once AG accepts the response, the request should be closed. The workflow should be configured in the system and the data transfer between OIOS and IFMIS Next Gen should be enabled through integrations.

5. The envisaged system should allow capture of various Audit products (as per AG's mandate) in IFMIS Next Gen for necessary action by the Department.
6. The envisaged system should allow the authorised user to upload the latest Audit report which includes current para and pending para received from AG. The system should integrate with OIOS to capture such paras. The system should also allow AG users to enter the objections/ para in IFMIS Next Gen through their logins
7. The envisaged system should allow AG users to issue advisories to Internal Audit execution team to inform them about any new typologies related to audit findings. The AG users can also share the approach for flagging such typologies. Such inputs may be captured by integrating with the OIOS knowledge management module.
8. IFMIS Next Gen should seamlessly capture all AG audit paras as shared by AG through OIOS.
9. The paras should be made accessible to relevant users as per their access rights.
10. After the entry of the Para, the system should allow the authorised user to add clarification against each para and submit for approval before making the same available to AG.
11. After the approval from the competent authority, the paras along with clarifications should be sent to AG office through the system (OIOS integration) or make them available on their IFMIS Next Gen login.
12. IFMIS Next Gen should provide an interface for authorized users to submit Action Taken Reports (ATRs) from time to time against the audit paras.
13. The envisaged system should display the pendency status of previous paras and seek response from the users for such paras.
14. System should reflect the closure of para if AG agrees to drop the same and if all clarifications are accepted and closed. The envisaged system should also allow issuance of advisory or clarification by the Department.
15. The envisaged system should route the unresolved paras to the HPC for resolution followed by CAG and then the PAC as per the prevalent rules. This workflow should be recorded in IFMIS Next Gen.

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16. The pendency status at each level should be visible in IFMIS Next Gen. Logins for relevant users of HPC, CAG and PAC should be provisioned in the envisaged system as agreed with these stakeholders.
17. The envisaged system should allow flagging of paras at various levels – CAG, HPC or PAC. The entire lifecycle of such paras till their closure should be tracked and be available in the system.
18. The envisaged system should allow generation of reports for pending paras at various levels based on the flags – HPC, CAG or PAC. The system should allow users to upload the reports of High Powered Committee to update the status of the pending paras.
19. The envisaged system should allow upload of supporting documents like amended rules, reports, minutes etc.
20. The envisaged system should allow input of records pertaining to Public Account Committee meetings. These records may contain details like members of the committee, draft paras' detailed reply, decision of committee and their comments etc.
21. For purpose of this integration, there will be a provision for Day 0 data refresh – historical data and metadata. SI should facilitate the same in consultation with CTA and AG office.
22. All API Access should be authenticated, and all data (requests and response) should be encrypted
23. API data access logs should be maintained

3.9 Business Support & Grievance Cell

It is envisioned that the envisaged IFMIS Next-Gen ecosystem includes a dedicated Business Support & Grievance (BSG) Cell with adequate resources. The resources staffed in this cell should address end user grievances, enable status tracking and serve as a communication channel with the corresponding module owners of CTA and its sub-ordinate offices.

A core component of the Business Support & Grievance Cell shall be a Service Management System with the following indicative building blocks –

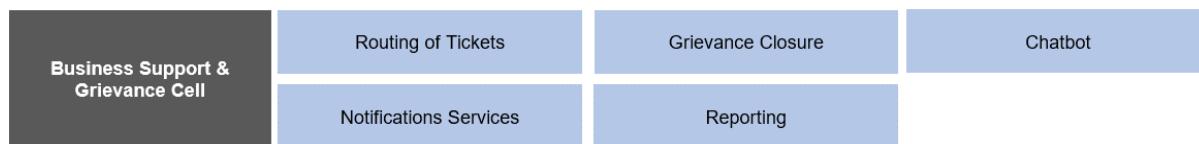


Figure 27: Grievance Management Module

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The Business Support & Grievance Cell should be able to facilitate both inbound and outbound communication to user groups of IFMIS Next Gen. Outbound communication will typically be used for follow ups with end users regarding their grievances, communication as part of a change management campaign etc. Inbound communication should typically encompass registration of grievances through the following channels –

- Chatbot with live agent chat option as well
- Forms available in the web portal
- Mobile Application
- Email to a dedicated email
- WhatsApp or SMS text message

Following functionalities should be enabled in IFMIS Next Gen –

- The envisaged system should allow IFMIS Next Gen users to raise grievances through multiple channels as listed above.
- The system should have the provision to view the grievance summary, detailed description of the issue, assign a criticality of the request (Low, Medium, and High) basis which the complaints should be allocated to relevant teams.
- The algorithm for assigning the criticality for the grievance should be configured by the SI after finalization of the same in consultation with CTA.
- Once request is submitted by the end user, system should automatically generate unique Service Request number, which can be used by the end user for tracking the status of the request
- Post the submission of grievance, system should send notifications (Email, SMS, others) to the BSG staff for the necessary action.
- The system should allow capture of details of the resolution along with the grievance raised by the user.
- There should be a provision of ticket closure along with the feedback by the end user.
- System should have the provision to generate various reports on the performance of the BSG. The performance of the cell should be monitored periodically.
- Chatbot - The system should provide a chatbot as part of grievance redressal. The chat-bot should ask the users to select the type of query from a list of categories mentioned within the chat window. Based on the chosen category, a list of FAQs should be listed in the chat window for the users to choose from. Once the resolution is provided in the chat window, users will be asked if they are satisfied (Y/N). If the response is negative (N), users will be connected to a live agent to address their query. If, in case, users' query is not listed in the FAQs, they can choose the 'Other' option, and this should directly connect them to a live agent.

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- The system should generate dashboards for authorized users for analysis of grievance pendency and their status of closure. An escalation matrix should be configured in the system to expedite closure of tickets.
- Reports consolidating inputs related to polices and rules should be generated from time to time and shared with authorized users of the rules section.
- The monitoring capability of the system should involve assessing calls/grievances to identify usage behaviour and feedback on IFMIS Next Gen as received from end users. This information shall be analysed by the SI to identify improvements required in the system such as - need for additional functionalities or identifying least used functionalities that should suggest design flaws or quality issues.
- The BSG should be operational during business hours of State Government of MP.
- SI should conduct an online user feedback survey after six months of roll out of IFMIS Next Gen
- Users should be allowed to re-open a ticket. If a ticket is re-opened for more than 3 times, the SI shall do a Root Cause Analysis to determine the issue

3.10 Learning Management System

A dedicated capacity building and outreach team would be set up by CTA to handhold the users and understand and develop training modules as per their needs. SI training resources will form a part of this team. This team should also conduct periodic surveys of Training Needs Analysis (TNA) and develop a training calendar accordingly. The detailed scope of the training cell is provided in section 2.3.5. The Capacity Building team should be staffed with the following resources –

Role	Responsibilities
Training Lead	<ul style="list-style-type: none">• Smooth operations of the training cell• Resolution of issues• Monitoring the training cell effectiveness
Content Creator(s)	<ul style="list-style-type: none">• Identification of training modules• Creation of content for online and offline modules• Preparation of ready reckoners - FAQs, AVs, user manuals etc.
Delivery Expert	<ul style="list-style-type: none">• Training delivery expert to work in tandem with the content creator and reviewer to deliver content in case of on premise or live trainings

Table 9: Training Cell Composition

Additionally, a Learning Management System (LMS) should be provisioned as part of the IFMIS Next Gen ecosystem. Access to LMS should be enabled seamless through the MP Treasury web portal or IFMIS Next Gen home/ landing page. The envisaged LMS shall cater to 2 major requirements –

- Learning Administration and Management for Accounts Training Schools (ATS)

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- Capacity Building of IFMIS Next Gen users

Currently, there are 7 Account Training Schools(ATS) in Madhya Pradesh which conduct Account's training. As per current process, following activities should be enabled in IFMIS Next Gen –

- Candidate application and nomination by Departments,
- Application processing and document verification by ATS
- Communication with applicants
- Training delivery,
- Tests and exams,
- Candidate feedback etc.

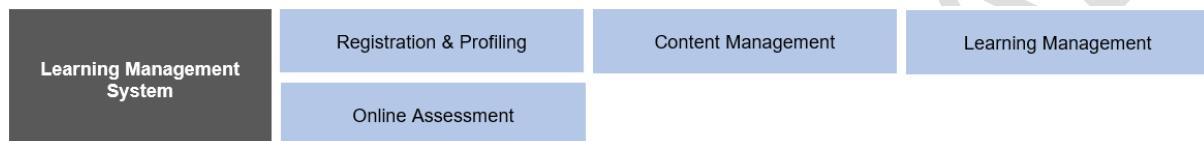


Figure 28: Learning Management

This module focuses on the training and assessment of all the employees. This module should facilitate the user to seek learning on demand which could be self-nominated or nominated by the department. This module should also allow the user to participate in a classroom learning sessions and live sessions also. This module should include new functionalities, tools and processes that allow for additional productivity and a step towards reducing human errors.

Indicative list of Trainings to be provided by the SI.

- Introduction and Overview to IFMIS - All users are provided with a general introduction to IFMIS
- Navigating IFMIS - All users are given a thorough interactive walkthrough of IFMIS. This session is geared towards familiarizing users with the IFMIS interface and how to interact with the system.
- IFMIS modules

3.10.1 Registration & Profiling

1. The envisaged system should allow the Candidate to register themselves with all the relevant profile information for various courses including the Accounts Training course provided by ATS.
2. The system should also allow authorized users to nominate certain employees for a training program. ATS training nominations should be invited in the same manner through the system.
3. Upon nomination of an employee for a specialized course such as Accounts Training by ATS, the system should generate a pre-filled application form with relevant details captured from the Employee Service Book. The applicant can add the missing

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information and submit to the Competent Authority for review and forwarding to ATS Principal.

4. The system should allow the ATS Principal or authorized user to review the application and accept/reject the same. The system should allow the process of finalizing training batches by the following committee:
 - a. JD (T & A)
 - b. DD (Deputy Director) or AD (Assistant Director) from the JD Office
 - c. ATS Principal

This committee collectively decides the final composition of the training batches. The applicant will be notified accordingly through the system, SMS or email etc.

5. The system should also provide the facility to bulk register for a particular course by upload of an excel or CSV file in a pre-defined format.
6. The system should also prompt to take user learning preference and categories.
7. The system should also have the facility to unsubscribe from a course after seeking necessary approvals
8. The system should provide facility for profile verification, viewing account details, alerts and notifications

3.10.2 Content Management

1. The system should allow authorized users to upload the content and make the same available to different users
2. Content being onboarded on platform should be the own work of content provider and free of plagiarism
3. The content on the platform should be regularly updated (at-least once every six-month or whenever there is a change in the content) to ensure accuracy, validity and relevancy. Impact scores on the platform will also reveal the need, if any, to update content.
4. All content being created, used and maintained should be accessible to people with disabilities and should adhere to accessibility standards.
5. The e-learning module should have tailor-made content for various proficiency levels like beginner, advance, and expert
6. The system should also provide the facility to catalogue the Digital content based on various parameters like proficiency, etc.
7. The system should allow to store the content having a mix of audio, videos, simulations etc. through shorter bytes of content that can convey the concepts as per the learning outcomes.

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8. The envisaged system should also allow update the Digital learning content and should also have the Authoring capability
9. The system should allow to provide the Quiz in various formats to store and link with the specific course or the content

3.10.3 Learning Management

1. The system should also allow for the candidate to nominate themselves after registration or the candidate can also be nominated by others and in this case the candidate shall register themselves then.
2. The system should allow user to navigate and select the desired course(s)
3. The system should allow registered candidate to enrol for any course or the Pre-Nominated user can also be nominated for course(s)
4. The system should also recommend the course(s) based on various parameters like user profile, past learnings, quiz performance, nominations etc.
5. The envisaged system should have the facility for administration, documentation, tracking, reporting and delivery of training programs. The training will be simulators topic wise.

3.10.4 Online Assessment

1. The system should allow creation and administration of exams including Accounts Exam (as per prevailing rules) and issuance of certificates to candidates
2. The system should have the capability to store candidate performance, marks, completion certificate etc.
3. The system should also record the additional data for each of the learning content like Quiz, level etc
4. The system should allow authorized users to access the generated certificate

3.11 External Integrations and Interactions

The table below lists down the data sources which have been identified for integration with the envisaged system. The SI should integrate IFMIS Next Gen with these data sources in consultation with CTA.

S.No	Agency	Key Integration Points
1.	Public Financial Management System	<ul style="list-style-type: none">• Currently, feeding of master data of GoI Schemes is an offline process. Proposed system will integrate with PFMS to fetch the master data of GoI Schemes through APIs or any other mechanism as finalized

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S.No	Agency	Key Integration Points
		<p>with PFMS.</p> <ul style="list-style-type: none"> • At the beginning of the year, Gol Budget-lines (Function Head) and State Budget-lines are mapped afresh in IFMIS. In the proposed system this manual exercise will be automated and a screen showing already mapped budget-lines will be available to the CTA office for verification and confirmation for the current financial year. • BCO/HoD/HoAD will send new budget-line mapping requests to CTA through the system for approval. However, CTA will also have the right to map any budget-line in the absence of any DDO requests. • Proposed system will provide the feature to modify/delete the existing mapping of budget-lines from a dedicated user interface. System should allow upload of Budget/Allocation/Expenditure files to PFMS server as well. • System will generate a Schema file to be consumed or shared with PFMS for mapping of central and state budget lines. • There is limited visibility of utilization of State share in CSS. Further to see Gol allocation, CTA has to access multiple reports like TRY01, SNA01, SNA06, etc. It is envisioned to integrate with PFMS for capturing grants from central government. Integration with PFMS is envisioned so that CSS receipts can be monitored through three-way reconciliation of PFMS, RBI Clearance Memo & Head wise allocation in IFMIS. • SNA Account updation of CSS should be available at front end in IFMIS Next Gen. • There are 4 different models of SNA payments provisioned by Gol. In order for State Finance Department to have greater visibility into the fund utilization for CSS, model 4 is the envisioned option. Model 4 indicates that SNAs work on State IFMIS, which is integrated with PFMS. In this case, SNAs will have to be mapped in IFMIS and all payments will originate from IFMIS and not PFMS. However reports will have to be shared with PFMS. • PFMS reports in IFMIS - IFMIS Next Gen will generate Budget, Allocation and Expenditure reports for all the budget-lines mapped in IFMIS/PFMS on

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S.No	Agency	Key Integration Points
		<p>the basis of SLS mapping in PFMS. These reports will be generated in real time. The reports will also display the details of the State Departments implementing each SLS.</p> <ul style="list-style-type: none"> • The envisaged system should interface with Banks to obtain visibility of unspent balance in Scheme specific accounts of Departments. • The SI would have to implement the prevalent implementation model during the course of the project. At present, ‘Just in Time’ process is being implemented to have payments of CSS through e-Kuber. • The system will have integration with PFMS dashboard • Any integrations with regard to PFMS, in future, will need to be accomplished to ensure smooth implementation of PFMS
2.	AG (MP)	<ul style="list-style-type: none"> • It is envisioned that dedicated logins be provided for AG users in IFMIS. AG users will be able to access GPF withdrawal requests through a dedicated IFMIS login provided for this purpose. • The AG login should also provide real time reports on cash position, budget availability, progressive budget utilization etc. • Through IFMIS login, relevant documents (vouchers, sub-vouchers, sanctions) should be available through a single click as a consolidated pdf file. • Master data synchronization between IFMIS and AG data (e.g. Alignment of Master data of Major, Sub-major and Minor heads between AG system and IFMIS) should be done periodically. Any combination of Major, Sub-major and Minor heads that does not exist for AG should not exist in IFMIS • Integration with OIOS Audit application of AG (MP) is envisioned to avoid overlap in audit functionalities between IFMIS and OIOS • Sharing of budget data – Data to be shared immediately after budget is passed, Information on supplementary budget to be shared • Real time reports on cash position, budget availability, progressive budget utilization etc. should be made available to AG • Corrections

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S.No	Agency	Key Integration Points
		<ul style="list-style-type: none"> o Adjustment entry should be done by Treasury in IFMIS based on correction memorandum shared by AG. Provision should be there in IFMIS to make corrections by Treasury/ DDO after accounts are frozen by AG after taking due approvals from Competent Authority. Sharing of memorandum of correction should be facilitated through the system. The changes should not impact Treasury accounts; it should be progressive (should appear in next month's report). o Amount changes should not be permitted; only head changes may be permitted, in line with relevant rules of the state o The envisaged system should allow AG to send objections (on expenditure, receipts, PD accounts etc.) such that the DDO and officers in the concerned hierarchy can view the comments. A dashboard should also be made available to track and monitor open comments for closure. • Relevant documents including sub-vouchers should be available in the form of a consolidated file to enhance readability. Once accounts are frozen, AG should have view privilege in IFMIS • IFMIS Next Gen should maintain GPF balances and reconcile annually with AG. No changes should be allowed to the GPF balances.
3.	RBI e-Kuber	<ul style="list-style-type: none"> • Currently, RBI sends the clearance Memo to Finance Department over e-mail summarizing the transaction details of the state. For the target state, clearance Memo can be made available through E-Kuber • For GST receipts, RBI has enabled a reconciliation and accounting mechanism i.e generation of Memorandum of Error (MoE) though e-Kuber. The process of MoE submission has been enabled in GoMP recently and will be enabled in IFMIS Next Gen as well. • IFMIS Next Gen should be integrated with E-Kuber for payments processing.

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S.No	Agency	Key Integration Points
4.	GSTN	<ul style="list-style-type: none"> • API based integration with GSTN for verification of vendor records through GSTIN • Identity verification - GSTIN, PAN verification etc. as part of the registration process of the vendor. • Receipt of GST challans for MoE generation and reconciliation of GST receipts of GoMP.
5.	E-HRMIS	<ul style="list-style-type: none"> • The HRMS functionalities for all state employees including the FD employees will be accessible from the e-HRMIS system of GAD or any other mechanism/process suggested by GAD. IFMIS Next Gen will be responsible for functionalities under the purview of Finance department. These functionalities include payroll processing, pay slip generation, processing of reimbursements etc. As per the GAD order dated 21 November 2024 (including subsequent amendments), provisions should be enabled for integration and data transfer between IFMIS Next Gen and e-HRIMS.
6.	NPCI	<ul style="list-style-type: none"> • Bank account validation of vendors through NPCI integration. The Vendor Portal shall communicate with NPCI through APIs to pre-validate all vendor accounts so that errors during payments can be reduced. • IFMIS can integrate with NPCI's Account Validation APIs for creation of global beneficiary master. • The Departmental DDOs, should also have the provision to opt for AEPS payment for employees/individual vendors with a valid Aadhar Number – hence payment would be done from consolidated fund to recipient with Aadhar linked bank accounts. • Other services of NPCI which may be assessed for IFMIS Next-Gen are <ul style="list-style-type: none"> ◦ e-RUPI could be utilized in cases where a one-time payment needs to be done by the department to a vendor on behalf of an individual. ◦ UPI mandates for any recurring payments

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S.No	Agency	Key Integration Points
7.	NSDL	<ul style="list-style-type: none"> • NSDL-CRA has developed SOAP based API and Reverse API integrations for state government operations of NPS • IFMIS Next Gen should be integrated with CRA for generation of PRAN for new employees directly • For pension payments, IFMIS Next Gen should allow fund transfer through e-Kuber and three-way auto reconciliation using transaction ID, office and subscriber details
8.	Agency Banks	<ul style="list-style-type: none"> • Integration with Agency Banks for reconciliation of payments and receipts of scrolls • Onboarding of payment mechanisms for Cyber Treasury • Integration with agency banks for processing of e-RUPI voucher for cashless and contactless payments • Visibility of bank account balances e.g. SNA accounts for unspent balance, Permanent advance, Loan accounts of Corporations to which Guarantees have been issued to have visibility of the loans received • Bank applications for seamless and real time Life certificate/Death certificate capture. • Integration with Agency bank for receiving legacy data of pensioners along with PPOs and transactional data.
9.	GeM	<ul style="list-style-type: none"> • Vendor records shall be reconciled between IFMIS and GeM from time to time. • Vendor rating matrix is matured in GeM system and inputs will be captured in IFMIS to gauge vendor risks
10.	NABARD	<ul style="list-style-type: none"> • IFMIS and NABARD integration through APIs for loan approvals, processing of SoEs etc.
11.	UIDAI	<ul style="list-style-type: none"> • Aadhar based e-sign and authentication of users
12.	Janm Mrityu Registrar / e-Nagar Palika	<ul style="list-style-type: none"> • Integration with the Janm Mrityu Registrar / e-Nagar Palika to access death certificate data / death certificate application data based on Samagra ID of the pensioner. • If the data is not available, facility to upload scanned copy of the death certificate should be provided.
13.	Service Providers like BSNL, MPEB	<ul style="list-style-type: none"> • Integration with Bharat Bill Pay System or other similar systems should be undertaken so that bills for Office expenditure like electricity, telephone from

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S.No	Agency	Key Integration Points
		service providers like BSNL and MPEB can be fetched by the DDO. Relevant information can be auto populated at the time of bill generation and the rest of the process remains the same.
14.	Department Systems like SAMPADA for Cyber Treasury	<ul style="list-style-type: none"> Integration with Department systems like SAMPADA for Cyber receipts and refund of receipts. Tracking of utilization of stamp purchased Integration with Commercial Tax Department systems for reconciliation of receipts
15.	Samagra	<ul style="list-style-type: none"> De-duplication of records using Samagra ID Capture of Samagra ID against beneficiaries registered in the system (e.g. Pensioners)
16.	Vahan & Saarthi	<ul style="list-style-type: none"> To capture the payment of fees to utilise the functionality as mandated by Central Motor Vehicle Act and State Motor Vehicle Rules
17.	PRIASoft	<ul style="list-style-type: none"> To generate online accounts by each rural local body, enable online auditing of such accounts and their consolidation at the State level.
18.	TreDS	<ul style="list-style-type: none"> TReDS Integration with Vendor Portal - The system should enable integration with the TReDS platform and provide a dashboard for Finance Department to view the payables/committed liabilities due to various vendors.
19.	Health Department's Medical Reimbursement and Advance Portal	<ul style="list-style-type: none"> The Health Department is developing a dedicated portal for Medical Reimbursement and Medical Advance. Provisions for integrating this portal with IFMIS should be added to ensure seamless data transfer and processing. Employee related IFMIS data will be used for state governments proposed cashless treatment scheme.
20.	MPSEDC for CPCT Score Card Details	<ul style="list-style-type: none"> Integration with MPSEDC (Madhya Pradesh State Electronics Development Corporation) is necessary to streamline the process of accessing CPCT (Computer Proficiency Certification Test) score card details
21.	SARTHAK-Based Attendance Mechanism	<ul style="list-style-type: none"> The ATS should incorporate the SARTHAK-based attendance mechanism to ensure efficient and transparent tracking of attendance

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S.No	Agency	Key Integration Points
		records. LMS / ATS and payroll module to be integrated with Sarthak Application for attendance tracking and reporting.
22.	Works departments	<ul style="list-style-type: none"> The system should have facility to integrate with other works management systems used by various works departments
23.	SNA Sparsh /DBT sparsh	<ul style="list-style-type: none"> System should have facility to integrate with SNA/DBT Sparsh.
24.	Mandal/co-operations/boards	<ul style="list-style-type: none"> System should have facility to integrate with these portal.
25.	EPFO/ESIC	<ul style="list-style-type: none"> System should have functionality to integrate with these portal.
26.	EPPO/SCPPC	<ul style="list-style-type: none"> System should have functionality to integrate with these portal.

Table 10: External Integrations & Interactions

In the absence of these integrations, the SI shall also enable an alternate mechanism such as data entry of required information (with necessary validations) in IFMS Next Gen. The list of integrations provided above is not exhaustive and the SI shall finalize the same in consultation with CTA. The SI shall be required to enable additional integrations (up to 15) beyond the ones listed above and mentioned in the specific modules. If during the O&M phase, any modification is required to be made to the system due to changes in the external systems it should not be treated as a change request.

3.12 Common Areas

3.12.1 User Management

User Management module will allow assignment of user roles and managing their access rights for various modules of IFMIS Next Gen. The figure below highlights the key functionalities of the user management module. The key functionalities include –

- User creation and role mapping,
- Viewing users
- Edit users,
- Password management,
- User administration,
- Profile verification,
- Access management policies.

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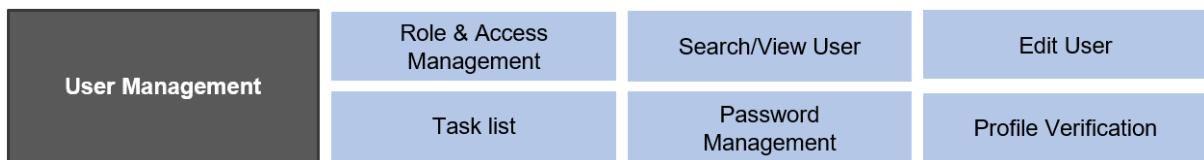


Figure 29: User Management

1. Defining Roles against Employee IDs

- Employee Service Record will be maintained in e-HRMIS and will be accessed in IFMIS Next Gen through integrations
- Employee mapping will also be shared with e-HRMIS over APIs or any other agreed integration mechanism
- The envisaged system should maintain and trigger the workflow for approval of users against roles assigned to them.
- The envisaged system should allow creation of new DDOs. DDOs creation shall be approved by Competent Authorities. HoD will request CTA to create a new DDO on fulfilling the conditions mentioned in the rule 12 (2) of MPTC 2020 or special approval provided by Finance Department. If Commissioner, Treasuries and Accounts approves the request, then new DDO Code will be created and the information of new DDO Code will be shared with AGMP. This information will also be visible in the AG login.
- The envisaged system should maintain masters for User type – Vendors, Employees, Contractors etc.
- The system should have the provision to maintain the Role, Post, Office, Cadre Master data in IFMIS as specified in section 3.12.2
- The system should provide an option to CTA Administrator or any other Authorized User to map roles against Employees
- The system should have the provision to delegate the work list item to other employee in case of absence of any other employee (employee is on leave, sabbatical, maternity leave, transfer, etc.)
- Bonafide users of the other Departments/Directorates should be allowed to access IFMIS either at an aggregate level or at granular level depending on their requirements and access rights. Data access to be restricted based on user rights and privileges.
- The system should allow assigning an administrator from the users configured in IFMIS Next Gen.
- Change in mobile number of office staff should be possible only through Admin Login. The SI shall identify such validations and implement the same in consultation with CTA
- External users such as NABARD, AG, Banks, LFD Deposit Admins etc. as defined in the respective modules to be onboarded onto IFMIS Next Gen

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2. User Creation

- User Creation functionality will include mapping of roles to Employees and/ or user creation of profiles for Vendors, AG or LFA bodies etc. Typically, every organization unit will have a super user assigned by CTA. The SI shall finalize this in consultation with CTA
- The system should have the provision for the Administrator to log into the system and navigate to the User Management screen
- Profile verification of the user by the administrator should be done through the system
- This function will allow the administrator to create different types of users mapped to their respective role. If a new user profile is created, the system should allow capture of details like personal information, Email, designation, assigning rights based on the role of the user etc. The SI shall finalize the user creation form in consultation with CTA.
- Post the creation of user, an automated e-mail containing the registration link shall be sent to the concerned user at the official email id and through other channels
- Post the registration link, user should receive a notification regarding successful creation of the user ID in the system.
- At the time of user creation, a unique ID (valid govt. ID) should be sought and verified before successful creation of the User ID.
- As stated above, SI to note that new Employees profile and Employee code will be generated in e-HRMIS or any other mechanism notified by GAD. The records will be synchronized between the two systems on a real time / near real time basis. For every new employee, the Employee ID will be generated in e-HRMIS. Subsequently, for a new employee, a Treasury ID will be generated in IFMIS Next Gen after the records are ingested by IFMIS Next Gen. These IDs will be mapped to each other for easier access and synchronizing the data between the two systems.

3. Search/ View User

- Using the search /view option, the envisaged system should allow the authorized users to search and view details of the existing users. The option to search using multiple parameters such as designation, contact number, email ID, Department etc should also be allowed.

4. Edit User

- The system should provide editing rights to the administrator to edit the existing user details in case of any erroneous entry or change in details of the users. A request should be raised which will be routed to the Competent Authority for approval.

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- The envisaged system shall also allow the users to submit an update request for their account details as per the access rights granted to them. After a request for change has been submitted, the request shall go to the competent authority for approval.
- The edit functionality should be restricted to the data points that have been generated in IFMIS Next Gen. In case any change is required in e-HRMIS data, the user will have to access e-HRMIS for the same.

5. User Administration

- The envisaged system should provide an option to the administrator to deactivate or revoke any access rights provided to the users. Additionally, an option to reactivate the users shall also be provided in the system.

6. Standardize Access Management Policies

- Access to the system should be provided via user ID (Employee ID for employees and pensioners) and the roles will be based on the designation / post of the employee. Access should also be provided to legal heir of employee or pensioner.
- The system should be equipped with adequate security measures like generation of audit trail for login attempts address, last login details etc, which should be tracked in the system.
- The system also integrate with NIC- LDAP used for e-Office login to allow for login to IFMIS Next Gen using official email ID, mobile no., etc.
- The envisaged system should also integrate with MP SSO for seamless login.
- The envisaged system should allow multi factor authentication as described below
 - - i. OTP based login - The user should be provided with an option to enter mobile number/e-mail ID for OTP generation. The user can enter the OTP followed by captcha and the soft token code for successful login to the system
 - ii. Password based login - The user should be provided an option to select the password route for login, followed by the and the soft token code and captcha for successful login.
 - iii. The system should enable session control and timeouts in case of inactivity
 - iv. Unsuccessful Login - After a pre-defined time interval configured in the system, the user account should get locked. Once locked, user should be allowed to raise a ticket to unlock their account and provision for creation of temporary password which would be sent to user on their official mail id. through which user can access the system immediately.

7. Password Management

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- The SI should design a robust password policy in consultation with CTA, which should be configured in IFMIS Next Gen.
- When setting up the password the user should be prompted to enter the password twice (Enter password, Confirm password)
- The password should be masked when entered by the user.
- The system should prompt the user to change the password before its expiration.
- In case where user has forgotten the password, the envisioned system shall display a link to regenerate the password. The system should display a text box where user can enter the Email ID for receiving the password reset link. Secondly, DDO should have a provision to reset email password as finalized in consultation with CTA.
- In case of a death of an employee or a pensioner, a new password request has to be made to Admin after due verification/authorisation.
- Any successful password change shall be intimated to the user through multiple channels - e-mails and messages and if the change has not been initiated by the authorised user, an option to immediately report the same shall be provided to the user.
- Access should be permitted through the official email ID, MP SSO, mobile no, soft token or any other parameters as finalized in consultation with CTA.
- Additional authentication mechanisms like soft tokens should be provided to Treasury Officers to approve large value transactions above a certain threshold. CTA shall provision soft tokens for the end users. SI is responsible to configure the same as per the requirements of IFMIS Next Gen.
- The system should also ensure the compatibility across multiple devices, network, channels.
- The envisaged system should allow deactivation of profiles by authorized users.

8. Profile Verification

- Profile verification notifications should be sent to users in the defined interval to keep the user information updated.
- Bounced e-mails or undelivered messages should be reported to CTA.
- Profile inactivity (thresholds as finalized in consultation with CTA) and if no user activity has been reported, the system should deactivate the profile. All such rules should be configurable through the rule interface.

9. Login, Task list Access & File Management

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- The IFMIS access and landing page should be designed in accordance with the Guidelines for Indian Government Websites (GIGW) or other global standards
- A mechanism to gauge user feedback on the user experience of the portal should be devised to capture on a periodic basis. Improvement in the portal design should be made in accordance with the feedback collected
- The user experience should be enhanced on an ongoing basis through reduction of manual and redundant inputs from the user.
- The envisaged system should allow the user to create and customise different views of the landing page.
- The user should also be given an option to modify the look and feel of the website using themes and design templates available on the portal. The envisaged system should enable changing the theme of the portal on the click of a button.
- The landing page should also show the pending tasks sorted by default in order of their due dates. A custom sort and filter option should also be provided for the task list with the option to save an option as the default user preference.
- The worklist should get updated in real time even in case of transfers or joining of a new employee etc. The system should have provision to ensure, if any official gets transferred and has pending requests awaiting necessary action from the Competent Authority, the pending requests should be routed to the office of the new Competent Authority. This should happen in real time as and when the transfer is reflected in the system through integrations with e-HRMIS.
- System should appropriately display where a request is pending on an employee hierarchy. The system should be capable to filter tasks/ requests against different fields - Employee profile change, family details etc.
- Employee profile page to display necessary details including role assigned, posting etc.
- The envisaged system should also allow a user to cancel a request or pull back a file sent to a Competent Authority in accordance with relevant State rules which should be configured in the system. The task list of both users in this case should be updated in real time.
- If an employee gets transferred, the task list of the concerned employee should get updated and routing of requests to the new office hierarchy should be done through the system itself.
- The envisaged system should allow employee to select a request which was previously rejected and copy the same to generate another request after making required changes and resubmit.
- The system should have a provision for triggering email alerts/SMS to IFMIS users for their pending approvals and other open worklist items.

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- The envisaged system should also allow management and routing of files and service books sent to JD office. The routing rules should be configured in the system and the file/service books should be routed to the concerned officials in the JD office as per these rules. The files submitted to JD office should indicate the purpose for which they are sent. The system should also allow JD or any other authorized user to change allocation of files/ Service books as deemed fit. A dashboard should be made available at JD level to view the file pendency at the JD office. Moreover, search option should be provided to authorized users to search for case allocations across multiple parameters like date of receipt, DDO, JD office name etc.
- The envisaged system should have the provision that when an employee is transferred or retired then on releasing him, he must be released from Hierarchy of each module.

3.12.2 Master Data & Registries

Masters are the consistent and uniform set of identifiers for different attributes used across the system at various data entry interfaces to minimise redundancy, manual data entry and to ensure data standardisation across the system. The key functional blocks of the envisaged Master Data module are depicted in below.

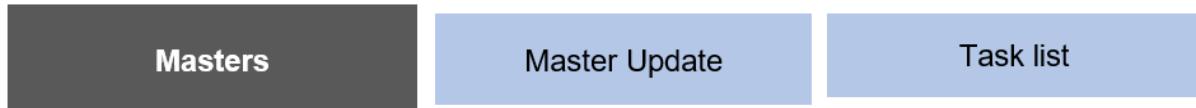


Figure 30: Master Data and Registries

1. Master Creation- The system should have the provision of creating new Masters by authorized users. In case new masters are created, the usage of the master should require changes in the application logic which will have to be undertaken by the SI.
2. Master Update- The envisaged system should have the provision of updating (edit/delete) the Masters by the authorised users through a dedicated interface. Additionally, the system should maintain old master structures as well. Provision should be kept in system to view old data, based on previous structure / meta data.

3.12.3 Alerts & Notifications

IFMIS Next Gen notifications should encompass a myriad of channels like email, SMS, push notifications, etc. to reach the end user seamlessly and provide real-time alerts. The key functional blocks of the envisaged Notification Management module are depicted below –



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Figure 31 : Notification Management

1. Notification Services

- The envisaged system should be capable of sending out alerts through multiple channels – email, SMS, mobile application, web application. The SI shall provision the required tools accordingly.
- The envisaged system shall have certain pre-configured alerts such as an upcoming deadline, an incoming message etc. The SI shall create an exhaustive list of pre-configured alerts and configure the same in the envisaged system in consultation with CTA.
- The envisaged system should have the ability to create new scenarios for alert generation and store prepared message formats for alerts to be initiated in the future.
- The envisaged system should allow alerts to be configured so as to target a particular user group
- The envisaged system shall also allow issuance of mass alerts or broadcasts
- The SI shall design and configure templates for the alert messages.
- The envisaged system should have the ability to sort/prioritise/filter alerts and messages.
- The alert message body should contain active links to pages where the action is to be taken
- The envisaged system should be able to detect unsuccessful delivery of alerts and attempt to resend. After three (3) unsuccessful attempts (configurable), the envisaged system shall notify the administrator regarding the issue.
- The envisaged system shall allow the user to subscribe to alerts based on their access rights and preferences and also specify the preferred delivery channel for receipt of the same.
- The system should provide the functionality of single and bulk notification services.
- For certain notifications, the envisaged system should seek approval by the Competent Authority before sending bulk notifications to the users.

2. Template Services

- The envisaged system should have ready to use templates for OTP, SMS, push notification messages etc.
- The system should be flexible enough to customise the notification templates as per the user need.

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3. Scheduling Services

- The system should be able to schedule notifications as per a pre-defined frequency scheduled by the users.

4. The SI shall provision necessary infrastructure for delivering e-mails, SMS to users of IFMIS Next Gen.

3.12.4 Reporting, Analytics & Self-Service Search

The envisaged IFMIS Next Gen should provide a facility for generating and viewing, real time BI and MIS reports for transactions handled during a specified period, transaction density trends for any specified periodicity (hourly, daily, weekly, monthly) and any bottleneck situation creating dependency at any stage. The BI and MIS reporting system shall be an integrated system which should provide user-friendly reporting for points of access like – CTA and/or Designated monitoring office. The list of reports described in this section is indicative and it will have to be finalised later by the SI in consultation with CTA. Further, the system should allow configuration of new reports using data elements stored in the system as per their access rights. The users should be able to template such reports and schedule generation of these reports at a pre-defined interval.

The system should provide BI and MIS reporting with multiple “Slice and Dice” options to generate reports in flexible formats based on user specific needs. The MIS reporting requirements can be stated from the following perspectives. The reports should present historical, statistical, and predictive views in addition to the daily/weekly/monthly views. The system should also provide a facility to convert the figures in lakhs, crores, thousands, actuals and other metrics as desired by the end users. The envisaged system should enable GIS reports and dashboards. .

Additionally, the SI should also provision 2 dedicated resources for assisting CTA in ad-hoc analysis and extracting various data points from the system.

A few indicative reports (the list is an indicative one and more parameters shall be added up later by CTA or their nominee) are listed below –

- Date-wise summary of transactions i.e. transactions done within the range of given dates
- Report on number of registered users' category wise etc.
- Report on number of registered users and their activities
- Establishment reports related to sanctioned and vacant posts
- Reports for Deposit Accounts maintained by State Departments
- List of Sanction Orders issued
- Sanctions vs Utilization report
- Budget utilization report
- Reappropriation reports
- Progressive/cumulative expenditure for projects/schemes
- Task list pendency reports
- Department wise reports of revenue and expenditure

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- Pay fixation reports
 - Dormant deposit and lapsed deposit reports
 - GPF/ DPF deduction and interest accrued report
 - Date wise expenditure and allotment report scheme wise and DDO wise
 - BCO to BCO expenditure report
 - Reconciliation report DDO wise, scheme wise, head wise and segment code wise
 - Scheme wise segment code wise allotment and expenditure report
 - DDO wise, scheme wise allotment expenditure and surrender report date to date wise
 - Separate reports for items kept in quarterly drawing limits should be available in IFMIS
 - Date wise Budget reports
 - Unit wise or withdrawal and disbursement wise report related to Narmada Valley Development Authority .
 - Department wise revenue receipt report.
 - Reports of Water Resources Department and Narmada Valley Development Department
 - Treasury cash balances
 - Pending Sanctions should be part of the ACS & other authorised users.
1. IFMIS Next-Gen should have robust interactive visualisations such as graphs, charts, and histograms.
 2. The MIS reports generated by the proposed solution should contain the name of the person generating the report along with date and timestamp.
 3. The reporting tool should have basic statistical modelling properties, so that users can create clusters, regression analysis, and other modelling techniques dynamically.
 4. The reporting tool should provide the output data in various formats including but not limited to xls, pdf, doc etc.
 5. Solution should be capable of generating highly formatted, interactive reports/ dashboards with or without parameters. Should also have strong ad hoc report generating capabilities.
 6. The proposed solution should have facility for capturing of data of other concerned departments based on relevant integrations..
 7. The proposed solution should have the ability to format (page size, row, columns, fonts, colours, tables etc.), allow data manipulation (slice and dice multidimensional data on the fly, pivoting, sorting, ranking, rearranging columns, etc.). The solution should have drill-down capabilities (ability to drill down to various levels of a hierarchy).
 8. The proposed solution should have the capability of raising exception alarms (e.g. email notification). Should provide for exception reporting (ability to set certain thresholds).
 9. The reports should also be available to authorised users through the mobile application. The tool should enable the organisation to develop and deliver content to

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mobile devices in a publishing and/or interactive mode, and take advantage of mobile devices' native capabilities, such as touchscreen. The proposed solution should support all leading and popular mobile platforms such as Android, iOS, Windows etc.

10. The envisaged system should allow generation of reports for a particular time period by specifying year or month or dates
11. Separate facility for items held in global system should be there in the envisaged IFMIS
12. The envisaged system should be equipped with dashboards for key stakeholders like ACS (Finance), Director (Budget) etc. The dashboard should be customizable and at an indicative level show the following information –
 - Real time cash position of the State
 - Deposit Account balance
 - Day wise disbursements and receipts
 - Pending payments
 - Cumulative receipts (YTD and MTD)
 - Treasury performance (Pending bills)
 - FRBM target reports
 - Any other report as finalized.

Statistical Analysis – The proposed solution should generate reports comprising of complex statistical dynamics and multiple parameters from historic data. These reports should be generated through the UI provided within the solution to authorised users. It should also present patterns found in historical and transactional data to identify risks and opportunities. The proposed solution should be capable of providing viewable descriptive statistics such as mean, median, max, min etc. and also should be capable of performing/aiding advanced statistical modelling and analysis including but not limited to correlation, regression, scoring, ranking, clustering, network plot, decision trees, scenario analysis, ANOVA etc.

Persona Based Analysis– The proposed solution should have advanced clustering and segmentation capability and should provide persona based segments for analysis based on user profile and behaviour. It would provide a window to understand what the users are doing on the system and what they are not doing, specifically analysing each users' focus / usage area, and hence improve the services quality and the content as well as features / functionalities related to it.

Predictive Analysis and Forecasting– The system should have the capability of generating predictive statistical models. It should be capable of capturing patterns and signals in data, analyse them and provide insights into future trends in the form of graphs and charts, based

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on certain parameters, statistical modelling and historical data. These should be used by the authorised users to identify trends at certain location / period and take appropriate decisions. The proposed solution should provide enhanced forecasting capabilities with scenario analysis allowing users to see impact of variable values on the forecasted trend.

Fraud / Anomaly Detection— The proposed solution should display alerts / information, based on certain pre-defined criteria, if there is any deviation from the standard trend / output. Access to such information / reports should be restricted to certain authorised users / decision makers only. These insights shall be used by users for decision making purposes.

An Ad-hoc query tool should also be devised in IFMIS Next-Gen with the following indicative features –

1. An easy to access and responsive search functionality in the form of an ad-hoc query tool shall be available to authorised Department users to help them conduct search on specific data sets as per their access rights.
2. The search parameters should encompass specific variables and the envisaged system shall also allow the user to sort and filter results.
3. The envisaged system should also allow the authorised users to save searches and execute them at a later point in time to display updated results.
4. In case, the user does not find the information and looking for using this functionality, user can raise a request to CTA and FD using the same interface.
5. The envisaged system should auto-generate such requests on the basis of the search query and present it to CTA or FD user for review. Upon confirmation, the request should be sent to CTA or FD.

The system should also generate reports and dashboards for monitoring project outcomes. The parameters and the underlying logic will need to be configured in the system. Some of these parameters are listed below –

Functional Area	Indicative Outcome Parameter
Budget Reliability	<ul style="list-style-type: none">• Variance between the approved Budget and the Actual Expenditure & Revenue outturn
Transparency of Public Finances	<ul style="list-style-type: none">• Access of comprehensive budgetary information to the public• Standardization of Budget classification codes and Head of Accounts

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Functional Area	Indicative Outcome Parameter
Management of Assets & Liabilities	<ul style="list-style-type: none"> Recording of assets Fiscal risk reporting Monitoring of projects
Policy based Fiscal Strategy & Budgeting	<ul style="list-style-type: none"> Macroeconomic and fiscal forecasting
Predictability and Control in Budget Execution	<ul style="list-style-type: none"> Effectiveness in recording and accounting for Government revenues
Accounting & Reporting	<ul style="list-style-type: none"> Maintenance of accurate and reliable data records, made available to relevant stakeholders as and when required Extent of reconciliation of suspense and advance accounts
External Scrutiny & Audit	<ul style="list-style-type: none"> Audit effectiveness and closure of open paras

Table 11: Indicative Outcomes

Some of the metrics that can be used for IFMIS Next-Gen reports are provided in the figure below –



Figure 32: Key Performance Indicators for IFMIS Next-Gen

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3.12.5 Mobile Application

It is envisioned to develop a mobile application for key users groups – Departments, Finance Department, State Government Employees, Pensioners and Auditors, Vendors, Citizens. The mobile application should be used for collaboration and viewing reports and pending worklist items and no sensitive data will be allowed to be accessed through the application. The mobile application should allow secure access to select reports and collaboration tools like contacting helpdesk, accessing notifications, viewing and approving/ forwarding pending worklist items etc. The envisaged features of the mobile application are given below –

1. Monitoring:

- a. Authorized Finance Department users should have the option to viewing various reports and dashboards on State Finances.
- b. All users should be able to view their pending worklist items and the mobile application should notify the users about their pendency.
- c. Dashboards such as the following should be included in the Mobile Application –
 - i. DDO Dashboard showcasing Submitted Bills, Bill Status, Employee Master, Payslip status etc.
 - ii. Check bill status screen with the option to enter the bill reference ID and obtain the status of approval of bills
 - iii. Claims received, pending for bill generation
 - iv. Finance Department dashboard to view the cash position of the state in real time, budget line wise balances

2. Collaboration:

- a. The mobile application shall enable real time messaging and query resolution through interaction with the Helpdesk.

The mobile application should also allow facilitating Audits (Internal Audit & Local Fund Audits). The reporting functionalities as envisaged in section 3.12.4 -should be made available through the Mobile Application, through a role based access model. The mobile application should also be enabled with multi-factor authentication for login purposes.

The mobile application should provide multiple features such as –

- E challan Submission
- Access to payslip and pension slips
- View request pendency and raise queries

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- Reviewing and approval of requests
- View Employee profile
- Verification and generation of life certificate for Pensioners

Users	Functionalities
Finance Department	<ul style="list-style-type: none"> • Secure access to viewing various reports and dashboards on State Finances e.g. cash position of the state, budget line wise balances, BCO/DDO wise expenditure, re-appropriation instances, etc.
DDOs	<ul style="list-style-type: none"> • DDO Dashboard showcasing Submitted Bills, Bill Status, Employee Master, Payslip status etc. • Check bill status screen with the option to enter the bill reference ID and obtain the status of approval of bills • Dashboard of claims received, pending for bill generation • Notification related to new tasks
Employees	<ul style="list-style-type: none"> • Pay slip status • Status of reimbursement
Pensioners	<ul style="list-style-type: none"> • Access to payslip and pension slips • View pendency of pension payments and raise queries • Review and updation of pension profile • View profile • Verification and generation of life certificate for Pensioners
Auditors	<ul style="list-style-type: none"> • Creating audit roster and plan • Auditors to access functionalities such as audit memo, para updation, daily diary, etc. • Uploading of supporting documents as captured during the internal audit
Vendors	<ul style="list-style-type: none"> • Invoice Submission by vendors • View status of payments • Raise queries on pending payments
Taxpayers & Citizens	<ul style="list-style-type: none"> • Payments and e-challan generation

3.12.6 Transaction Monitoring & Analytics Cell

The Transaction Monitoring Cell shall be staffed with resources from the SI team and monitored closely by designated officials from CTA and/or FD. The responsibilities of the Transaction Monitoring Cell will include—

- Formulating and updating rules and controls for monitoring of financial transactions undertaken by Departments within GoMP. Such rules should include checks such as potential duplicate payments, payments to ghost beneficiaries, payments to a high risk vendor etc.
- Flag suspicious transactions for further review and action
- Identify patterns of related transactions and flag such cases for necessary action
- Manage user roles and workflows for sending transaction alerts
- Conduct sample studies from time to time to refresh the rule repository and risk model for generating alerts
- Provide guidance to Finance Department on preventive strategies to be adopted for frequent red flags
- Continuously review rules to minimize occurrence of false positives

The Transaction Monitoring cell shall strive to unearth new rules and risk scenarios for potential breaches or suspicious activities in the system. A repository of such scenarios shall be maintained and configured in the system. Examples of such rules are provided below –

Modules	Indicative Scenarios
Payroll	<ul style="list-style-type: none">• Unwarranted changes in pay structure and allowances
Receipt & Disbursement	<ul style="list-style-type: none">• Sanction order and bills used multiple times
HRMS	<ul style="list-style-type: none">• DPF/GPF Bills with no associated budgetary limits• GPF Final payments - multiple drawals against a single authority
Deposit and R&D	<ul style="list-style-type: none">• Manual updation of balances of Deposit Account.

Table 12: Indicative scenarios

3.12.7 Rule Interface and Management Team

The envisaged IFMIS Next Gen should be equipped with a Rule Interface which will allow authorized users to configure and manage business rules and their applicability to various processes in the system. It is envisioned that the team shall be staffed by technical resources from the SI team and supervised by designated officials from CTA. The typical activities of the Rule Management Team will include –

1. Business Rule Creation

- Liaising with Stakeholders and Authorities to clearly understand new rules, notifications and orders
- Design the rules and facilitate vetting of the same by concerned authorities
- Test the rulesets and obtain signoff for full scale implementation

2. Impact Assessment

- Assess the impact of new rules on existing rules, identify any possible conflicts between rules and resolve the same

3. Rule Updation and Management

- Review existing rulesets, delete inactive rules
- Monitor any issues with existing rules and implement changes as per need
- ‘Arctic scripts’ containing details of all system anomalies to be generated and sent periodically to key personnel from FD and SI

3.12.8 Knowledge Management

The system should be equipped with Knowledge Management functionalities to allow users to query a vast database of data sets available in IFMIS Next Gen for various activities such as generating quick responses to queries from external agencies. The system should also index and store these responses for future reference. Upon receipt of a similar query in the future, the system should generate suggestions based on the historical responses. The knowledge management module should also be equipped with the following indicative functionalities –

- Ease of collaboration and sharing of information between users
- Flagging of frequently accessed information
- Categorization and indexing of similar data sets or information
- Intuitive search
- Availability on mobile based on the access levels of the users

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- Ability to publish information

3.12.9 Open Data Access and Data Monetization

The envisaged system should allow publishing of relevant data sets (identified in consultation with CTA) in public domain various data formats like xls, csv, xml, etc. These data sets may be available for download and further used with popular data analytics software like SPSS, R, Python, etc.

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4 Technical Requirements

The IFMIS Next-Gen application should be designed and developed using a modular approach. Bidders may propose any solution / technology. The solution proposed should meet all the functional, non-functional, technical and operational requirements as mentioned in RFP. This section provides an illustrative view of the high-level solution architecture of IFMIS Next Gen, key technical components, and technical requirements for the solution etc. The SI is expected to study the section in detail and propose a solution which complies with all the requirements thus laid out and in other sections of the RFP. Any other solution component(s) not provided in this section, but which may be required for the solution to work have to be provided by the SI as part of their technical and commercial proposal, to ensure that the solution meets its desired objectives at no additional cost to CTA. Under all circumstances, choices of components will have to be so made to ensure compliance with clause 144 (xi) of GFR on land border and its subsequent amendments.

4.1 Design Principles

1. Reconstruction of Truth

System should not allow database / system administrators to make any changes to data. It should ensure that the data and file (data at rest) have tamper resistance capacity. System should be able to detect any data tampering and should be able to reconstruct the truth. By design any data input on IFMIS will have to be made through front-end forms and workflows. No data updates will be allowed through the backend. If there is a need to update values in data field(s) in IFMIS which is not possible through the usual data entry process, the system will have a provision for a special "Data Update Workflow", where the user will put in data update request with necessary reasons and the same has to be approved by competent officials with sufficient seniority. The approval matrix will be shared with successful bidder during implementation phase. Standard Service Request workflows will not be used for addressing data update requirements. By design all derived data fields (field where values are based on computation) in IFMIS will be non-editable. If for any reason, a need arises to update such a data field, the "Data Update Workflow" will have to be triggered

2. Usability

The system should be available over internet and intranet (with necessary security protocols). User interface and master data should be bilingual (Hindi and English), responsive to screen forms and should comply to leading standards for ease of access of Divyangjans (Ex: GIGW, WCAG). All forms available in the system should be configured in both English and Hindi. An inclusive design to consider aspects such as a user's digital proficiency, upload / download needs, character limits, language barriers, access to internet and users with special needs. End users should not require programming skills or knowledge of complex tools to use the outputs or any modules of IFMIS Next Gen. The SI should follow universally acceptable design principles when designing the UI/ UX / CX. SI would be required to configure access of certain functionalities / modules over secure MPLS in case it is decided by CTA at any point during the project, at no extra cost to CTA.

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3. Sustainable and Scalable Solution

For IFMIS Next Gen, consideration to scalability is paramount, and hence, the system should be built on principles of functional and non-functional scalability like horizontal scalability, seamless scalability of all underlying components, and modularity (enabling one component to scale independent of other components). Design for components to be minimalistic, independently replaceable and extensible. This will allow different components to be loosely coupled when building solutions, thereby enabling solutioning diversity and continued development. The entire solution should have flexible and scalable architecture and leverage microservices design pattern instead of monolithic layered architecture to support the efficient handling of data and business logic and enable streamlined delivery across various access channels.

4. Distributed Access and Multi-channel Service Delivery

The proposed solution should allow stakeholders to interact through multiple channels/interfaces with IFMIS Next-Gen system. For the same, an important consideration for designing is access devices and their screen capabilities (including browser variations). Multiple channels should be considered for access requirement (mobile, tablets, etc.) while designing the solution.

5. Configurability using Business Rule

All configurations including policy decisions, business parameters, rules, MPTC, MPFC, other related acts and rules of MP and central government, etc. are to be captured in the central system. The system should allow addition/ edition/ deletion of policies/ rules to ensure “single source of truth”. Hence, it is required to decouple business parameters/ rules/ master data from the rest of the solution architecture. There should be a central interface for managing the configurability by authorized user groups. By design all derived data fields (field where values are based on computation) in IFMIS will be non-editable. If for any reason, a need arises to update such a data field, a “Data Update Workflow” will have to be triggered. The SI shall configure such workflows in IFMIS Next Gen.

6. Data Driven Decision Making

The system should be able to provide information to support decision making. The system should also provide ad-hoc reporting functionality to the end users. A feedback loop regarding the accessed data should be created to ensure quality is measured systematically and feedback is given to improve any specific issues that are identified. The following points broadly describe objectives for IFMIS Next Gen system, keeping in mind the large ecosystem –

- Drive decision making based on data analytics: Analytics and reporting capabilities to be included to offer stakeholders data driven insights. Every transaction & event including that of the system administrator should go into the BI tool to develop insights for decision making.

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- Empower self-improvement: Tools, data and platform to be created to assist stakeholders analyse their performance and operational metrics.
- Self-service analytics and dashboarding.

The analytics should break any module-based silos for reporting. It should cut through data from all modules with well-defined metadata driven lineage. IFMIS Next Gen should be capable of conducting advanced analytics and visualization seamlessly. It should provide capabilities to integrate advanced analytical tools and create sophisticated analytical solutions. These analytical solutions would be purpose-built for specific business problems of the end users. IFMIS Next Gen should be flexible to query all data systems together without copying data from one data store to another. User should be independent and be abstracted of platforms on which the queries are running. The system should provide different views of data which should be accessible to authorized users.

7. Interoperability

IFMIS Next Gen should be interoperable, in order to support information flow and integration with other systems as per the need. It should support the open architecture solutions such as XML, JSON, LDAP, Directory services and SOA etc. where information/ data can be shared with any system, whenever desired. The proposed system should support open standard technologies. The system should also provide for alternate mechanisms for data inputs in case integrations or APIs are not available with external departments or agencies.

8. No Single Point of Failure for Critical Components

The system should be designed in a manner that there is high availability for all critical solution components. Further, such critical solutions should ideally have requisite internal redundancies so that overall, there is no single point of failure.

9. Manageability & Agility

It is essential that the application architecture handles failures (such as hardware failure, network outage, software crashes, etc.) effectively. The system should be resilient to failures and have ability to restart with minimal human intervention. All layers of the system such as application, infrastructure should be managed through automation and proactive alerting.

10. Performance

Leading technologies should be proposed for solution to ensure high performance. Design should ensure that performance of various modules (especially in case of disaster) is independent of each other to enhance the overall performance. The solution design should cater to the following –

- Modular design to distribute appropriate system functions on web and app server
- Increase in-memory operations
- Reduce number of I/O operations and network calls using selective caching

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- Micro services-based architecture and container-based deployment along with container orchestration for auto scaling.

Support concurrency in terms of system usage through load balancing. Periodic performance and peak load testing should also be conducted to check for system performance using a pre-defined set of concurrent users.

11. Continuous Build & Ease of Deployment

Ease of deployment is a key consideration for IFMIS Next-Gen. The process for releasing/deploying software should be repeatable and reliable. The deployment process should be automated and secure such that components can be deployed independently without affecting the existing already deployed components. The bidder may explore using a Low Code No Code (LCNC) platform.

12. E-governance and M-Governance solution with an omni-channel - web & mobile based service delivery.

13. Portability

The proposed solution should support all leading and popular operating systems like Linux, Unix, Windows etc. Similarly, the application should be accessible on all leading browsers and mobile platforms. The application should be designed to allow access across multiple devices, browsers and allow for interoperability without dependencies of any versions of browser and shall be mobile compatible

14. Microservices based Architecture

Each business module should be built a set of independent services, implemented using APIs to ensure accessibility across a multiuser ecosystem, ensure vendor/ system independence, and ability to provide usage of various devices (mobile, tablet, PC etc.). Any performance issue of one module should not affect the performance of other modules. The SI should ensure the architecture is modular and adheres to principles of cohesion and coupling. The architecture should also allow seamless interoperability with existing system in case of the need in the future.

15. Security

CTA reserves the right to inspect all inbound and outbound traffic from all hardware and software products and to analyse the same to identify patterns of leakage of sensitive and configuration data outside CTA and to obtain immediate replacement with equivalent or better hardware and software product, from SI, at any time during the contract at no additional cost to CTA. The envisaged system should provide data masking and sub-setting capabilities. It should enable discovery of sensitive columns and parent-child relationships while transferring data to the test, acceptance and development etc. environments. It should also provide sub setting of data by deleting unnecessary rows from a database.

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16. Version Upgrades

As outlined by ITIL, COBIT, and other industry frameworks, both software and hardware version upgrades follow a structured and controlled approach to ensure changes are implemented with minimal risk to the existing environment, while ensuring all stakeholders are properly informed and engaged. Additionally, update internal documentation to reflect the new version, including details on new features, bug fixes, and any configuration changes. Additionally any version upgrade/ changes in application shall be implemented in test environment. The application shall be migrated to the production environment only after adequate testing, submission of test completion certificate from SI and approval by the designated CTA official. A quality assurance test of the changes to be implemented will be performed in a test environment prior to implementation in the production environment.

17. Others

The envisaged system should also ensure maintenance of data integrity, consistency, management of Data Lifecycle, compliance to industry standards. Audit trail and logging should be enabled in the envisaged system.

Bidder is responsible to provide the complete solution by proposing all required software and hardware components along with licenses. The proposed solution should ensure compliance with all RFP requirements (functional, technical etc.) and comply with all the required service levels as mentioned in the RFP. In case bidder proposes any open- source software, only supported versions/ editions of open-source should be used and bidder must arrange for enterprise support from third-party agencies providing such specialized services for the quoted software package. The SI should ensure that the proposed solution architecture can be optimized to cater to varying workloads. MPSeDC will also be involved along with CTA office in the review of the proposed solution architecture design of IFMIS Next Gen.

4.2 Technical Architecture

The envisaged architecture provides for the key logical components at every layer, key technical components and technical requirements for the envisaged system. It is envisaged that any other technical component not provided in this section but which may be required for the envisaged system to work has to be provided by the SI at no extra cost to CTA.

The applications shall be designed, developed and deployed by the SI in line with the high level solution / logical architecture and it should be able to deliver all the functional, technical and operational features as mentioned in this RFP, meeting the desired service levels. The SI shall deploy the latest stable version of all solution components including the existing components in case the bidder decides to propose the same.

The diagram below provides an indicative logical architecture of the IFMIS Next-Gen system

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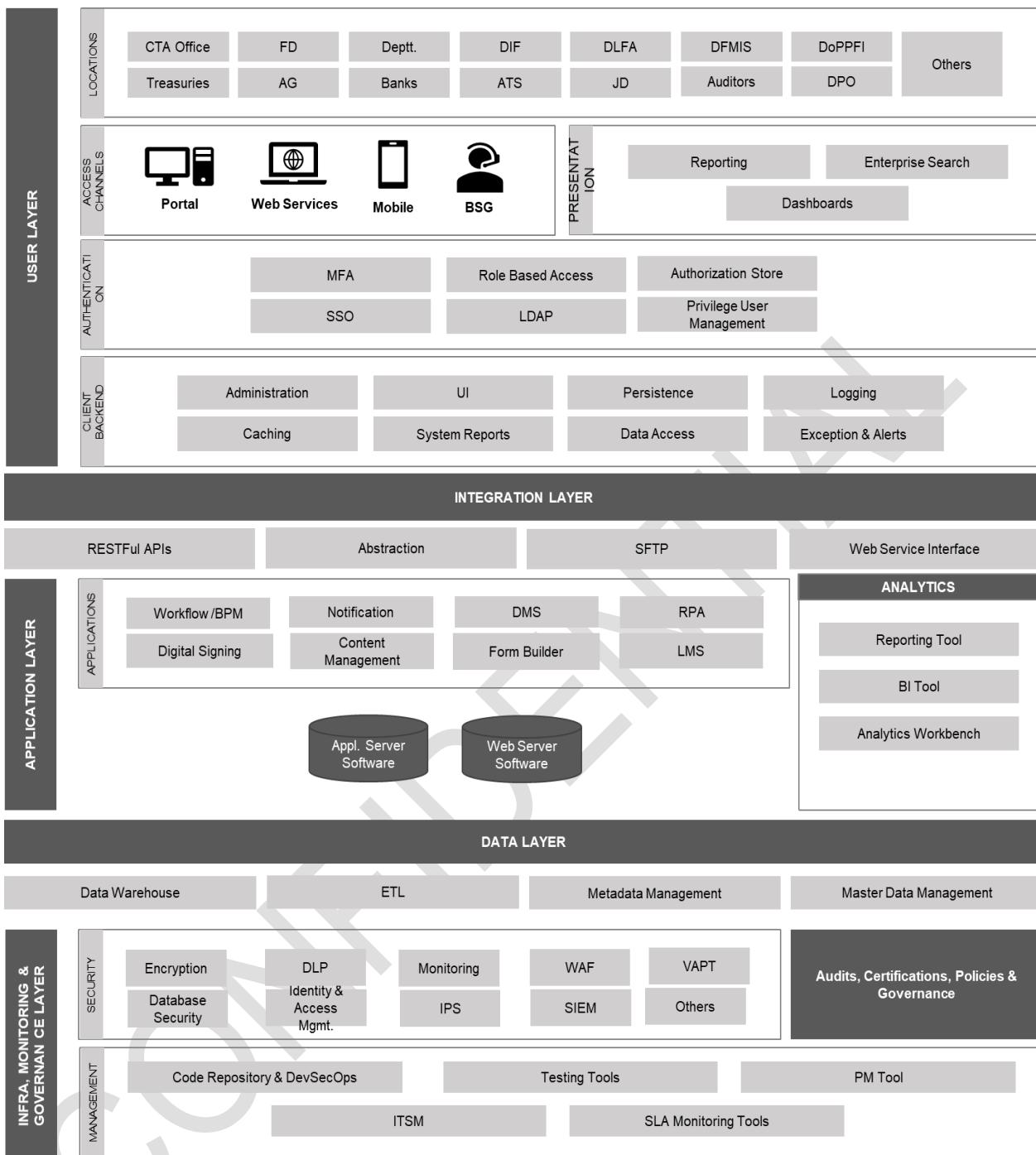


Figure 33: IFMIS Next-Gen Technical Architecture (Illustrative)

IFMIS Next Gen is envisaged to be a faceless system based on user experience with an microservices based architecture. In this regard, secure APIs should be used to ensure accessibility across a multiuser ecosystem, specific vendor/ system independence, and ability to provide usage of various devices (mobile, tablet, etc.) that are built on top of such APIs. The envisaged system should also be open to integrate with external platform services – e.g. Learning Management System integration, MP SSO etc. the web portal & mobile application should be developed as per GIGW guidelines etc.

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It is intended to develop common platform to allow stakeholders to seamlessly interface with the IFMIS Next-Gen application for various activities. Unbundled components/ services should be offered via APIs and other well-defined mechanisms to allow diverse solutioning by the ecosystem and to ensure that the systems can evolve.

The summary of technical interventions are provided below –

#	Interventions	Benefits
1.	User Interface (UI)/ User Experience	<p>Three types of UI should be leveraged in IFMIS Next Gen namely, Graphical, Menu based and Form based. The SI shall strive to optimize screen retention by the users, to save time and efforts of the users, ensure ease of navigation and accessibility across a diverse user group. The modern design thinking approach of UI development should be adopted in which a design problem would be resolved keeping the user experience at the core. The following indicative pointers would be considered by the SI while designing UI/UX -</p> <ul style="list-style-type: none">• Bilingual interfaces (Hindi and English)• Screen design• Visual perception• Level of experience• Physical abilities• Uniformity of style• Ergonomics• Eye soothing colour combination• User-centred, aesthetic and minimalist designing approach• Context & task sensitive help <p>Additionally, the UI shall be designed in alignment with GIGW's standards of Government of India or any other standard notified by GoMP. For the purpose of designing a user friendly system, design thinking workshops and user stories should be created. Wireframes and mock UI screens should be presented to select end users to invite suggestions on how to improve the UI further. Also, the system should allow capturing of periodic feedback on the UI for future enhancements.</p> <p>The envisaged system should be mobile Android/IOS compatible and independent of any versions of browser. The envisaged system should also be compatible for Divyangjans across all access channels as already outlined earlier.</p>

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#	Interventions	Benefits
2.	Rule interface	<p>The processes implemented in IFMIS Next Gen will be governed by the policies, acts and rules laid down by the Government of Madhya Pradesh and other agencies. In such a scenario a rule interface should be provisioned to provide a flexible platform to manage and configure business rules in IFMIS Next Gen in accordance with the guidelines. Rule interface should be used to implement a set of rules to reduce manual data entry and automate repetitive tasks such as reporting, checking eligibility requirements, etc. The rule interface should enhance configurability of the system and eliminate the need for code changes due to any new notification or guidelines which required changes in business rules of IFMIS Next Gen. It is important for the bidders to consider while designing the solution that the rules of GoMP undergo change periodically, and it will require the bidder to configure the revised rules in the system. The bidder will be required to conduct impact assessment of rule changes (old rules that are getting modified, removed etc) and then finalize new rules with CTA and configure them in the system. Maintaining the entire ruleset in accordance with the prevailing government rules will be SI's responsibility. SI must maintain audit trail of rule changes and ensure that revised rules are applied only after necessary approvals or as notified by GoMP. This is a continuous activity and will continue during the O&M phase of the project. Any changes required in the ruleset due to rule changes by GoMP / any Competent Authority will not be considered change request under this contract and are part of the scope of this RFP. All rule changes must therefore be carried out at no additional cost to CTA. SI need to submit monthly report covering all changes related to rules.</p>
3.	Mobile App	<p>The SI shall design and develop a hybrid mobile application for IFMIS Next Gen. The envisaged mobile app will let the employees execute tasks and view reports on their smart phones or tabs. The vendors and other users should also be provided the app to encourage digital communication leading to paperless operations.</p>
4.	Chatbot	<p>A chatbot should be developed to address user queries. The chatbot should interact with end users, gather information, provides first line of support and if required, call API(s) for responses or route queries to the appropriate recipient.</p>
5.	IT Service Management	<p>In addition to the helpdesk services, the system should also provide IT service management system for logging, viewing, updating and closing incident via web interface.</p>

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#	Interventions	Benefits
6.	Dashboard Reporting &	IFMIS Next Gen should be equipped with a BI tool to configure various dashboards to monitor key performance indicators (KPIs) in real-time, identify areas of improvement, and make decisions that will help achieve the desired outcomes. Dashboards should be devised in a manner to help users understand complex data sets easily. The users should be able to see multiple metrics at a glance, customize the layout to fit specific needs, and drill down into the data for more granular analysis and decision making. Additionally, IFMIS Next Gen should also provide various automated, detailed, organized and real-time reports.
7.	Document Management System (DMS)	IFMIS Next Gen should be equipped with a Document Management System, capable of keeping a record of the various document versions created and modified by different users (history tracking) and optimally use the storage space. DMS should help to streamline processes, reduce the need for paper records, and make it easier to search by metadata or content and retrieve documents.
8.	Analytics Workbench	IFMIS Next Gen should be equipped with an Analytics workbench to facilitate transaction monitoring, devising rules and analytical models. The Analytics workbench should provide capabilities such as risk profiling, understanding correlations, trends and anomaly detection, transaction monitoring etc. A dashboard should allow updating rules and controls for monitoring of financial transactions undertaken by Departments within GoMP. Such rules should include checks such as potential duplicate payments, payments to ghost beneficiaries, payments to a high-risk vendor etc. The system should identify patterns of related transactions and would flag suspicious transactions for further review and necessary action. The system should also manage user roles and workflows for sending transaction alerts and would be able to automatically refresh the rule repository and risk model for generating alerts. It should also provide assistance to Finance Department to develop preventive strategies to be adopted for frequent red flags. The SI should, from time to time, as per the requirements submit a report on the analytical interventions proposed, indicative KPIs etc, to CTA office.
9.	Project Management Tool	The system should be equipped with a project management tool to support CTA to – <ul style="list-style-type: none"> • Construct and maintain a project plan schedule with milestones. • Identify and configure the critical path and dependencies between modules

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#	Interventions	Benefits
		<ul style="list-style-type: none"> • Measure project deadlines and performance objectives • Communicate the project plan to stakeholders with meaningful reports. • Project progress and possible delays • Provide facility for detecting problems and inconsistencies in the plan.
10.	Digital Signature and E-Sign	The envisaged IFMIS Next Gen should allow the user to sign a document electronically and validate the signer. The user shall be allowed to sign forms and documents with encryption of data in database to check tampering if any.
11.	Authentication, Authorization and Access Rights Management	The envisaged system should be designed with provisions available for designated nodal officers/admin officials to assign access rights and privileges to various officials involved in reviewing and approval processes. This would be a role-based access. The envisaged system should allow the end user to login using multiple parameters such as Employee ID or Mobile number or email ID. Moreover the system should allow users to switch between their Employee profile and the post specific profile seamlessly. The system should also allow delegation of rights as per relevant rules. The envisaged system should allow use of authenticators and enable feature of TOTP and Biometrics.
12.	e-Learning Solution	Learning Management System shall be provisioned as part of the IFMIS Next-Gen ecosystem to facilitate user trainings and upload online courses.
13.	Digital Experience Platform	A digital experience platform should be used to generate dynamic forms to collect information in digital form.
14.	Automated Testing Tool	The SI should provision testing tools to automate creation and execution of test cases by providing appropriate input and verifying the output against the functional requirements. The tool should allow testing of UI, API, database calls, security, performance and other areas. The SI should provision all required tools for performance testing, VAPT etc.,.
15.	SLA Monitoring Tool	The tool should generate real time alerts and escalations (through e-mails) for every violation of service level. The tool would also be able to present full electronic audit trails available for both the system and user transactions.
16.	DevSecOps Tools	It is envisioned that the IFMIS Next Gen will be implemented as a series of modules across multiple iterations. To manage these implementations effectively, a DevSecOps approach should be adopted. A standard industry practice should be followed for CI/CD pipeline implementation using a master

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#	Interventions	Benefits
		and branch strategy, where each environment has its own dedicated branch. This strategy simplifies distinction, monitoring, and auditing, ensuring smooth transitions from development to deployment across different environments. The SI should provide the necessary deployment tools for coding, building, releases, CI/CD pipelines, and other stages of development. Designated CTA officials should be granted read-only access to the DevSecOps tools.
17.	Data Warehouse	The SI should provision a Data Warehouse for structured, semi-structured data sets within IFMIS Next-Gen. The solution should be able to analyze large volume of data and generate visualizations on the fly, without any performance degradation.
18.	Database Activity Monitoring	The solution should monitor the database servers and maintain audit trail of any changes in the database.
19.	SIEM Tools & EDR Tools	The SI shall monitor Security Information and Event Management (SIEM) tool and EDR tools to offer real-time monitoring and analysis of events as well as tracking and logging of security data for compliance or auditing purposes. It shall capture logs, events, incidents from all integrated system/modules within the IFMIS Next Gen infrastructure.

At present the department has a total of 5,614 DDOs and total 1,62,144 office (inclusive of DDOs).

SI should design the solution so that it supports up to 20,000 DDO office. The number of DDOs may go up to 20,000.

At the time of scaling up of the system for up to 20,000 DDOs, SI to provide the requirements for additional VMs to CTA and configure the system to support the additional DDOs and maintain the required service levels. Any other requirement like software licenses will be provisioned by the SI at no additional cost to CTA.

4.3 Emerging Technology Use Cases

Listed below are some indicative use cases for emerging technologies to be developed as part of IFMIS Next Gen. These use cases are illustrative and the SI shall finalize the same in consultation with CTA and implement the same using the Analytics workbench defined in section 4.8.3.

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S.No	Associated Module	Use Case Name	Description
1.	Cash Management	Cash Flow Forecasting	<ul style="list-style-type: none"> Using Machine Learning models, system should prepare projections for cash flows across multiple time frames. Historical data of revenue and expenditure, expenditure plans and revenue targets may be used as inputs to the forecasting models. These projections will be an important input to ascertain borrowing requirements (quantum and the appropriate time to borrow) and reduce the overall borrowing cost. The user must be able to generate various scenarios for planning purposes.
2.	Revenue Management	Revenue Forecasting	<ul style="list-style-type: none"> Generate revenue forecasts using time series forecasting techniques Historical data sets and buffers for macroeconomics trends may be used as inputs to these models. The forecasts will also serve as critical inputs to the respective revenue department in planning their resources for the future and setting targets. Revenue forecasts should be done at granular level such that it can be used for targeting setting. SI shall use actual versus predicted values in subsequent years to fine tune to the models and reduce forecasting error.
3.	Expenditure Management	Automated Bill Reviews	<ul style="list-style-type: none"> Leveraging AI based OCR to review and analyse TA bills received by Treasuries. The model will read data points from scanned copies (wherever feasible) and compare / validate

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S.No	Associated Module	Use Case Name	Description
			the values entered in the form against the bills and provide inputs to the user for verification and approval.
4.	Expenditure Management	Automated Reviews Bill	<ul style="list-style-type: none"> Leveraging AI based OCR to review and analyse Medical bills received by Treasuries. The model will read data points from scanned copies (wherever feasible) and compare / validate the values entered in the form against the bills and provide inputs to the user for verification and approval.
5.	Expenditure Management	Transaction Monitoring	<ul style="list-style-type: none"> Multiple use cases related to leveraging ML in transaction monitoring by clustering of transactions to assign risk values. Using machine learning to identify risk thresholds for high risk transactions
6.	Budget Management	Risk Buffers for Budget	<ul style="list-style-type: none"> Computation of risk buffer for budget estimates based on macroeconomics trends and historical data analysis
7.	e-Accounting & e-Reconciliation	Automated Reconciliation	<ul style="list-style-type: none"> Using classification techniques to identify mis-categorization of accounts and mis-posting of transactions in IFMIS Next Gen based on the bill type, invoice and sanction details etc. Alerts will be generated for the DDOs at the time of bill submission
8.	Vendor Management	Vendor Risk Profiling	<ul style="list-style-type: none"> Risk profiling of vendors and associated transactions based on the overall vendor profile, inputs, type of services offered etc.
9.	Vendor Management	Automated Vendor Profile Reviews	<ul style="list-style-type: none"> Usage of RPA for validation of vendor profiles
10.	Local Fund Audits	Risk based Audits	<ul style="list-style-type: none"> Identification of auditee institutes for Local Fund Audits based on their risk profile.

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S.No	Associated Module	Use Case Name	Description
			<ul style="list-style-type: none"> Parameters such as date of last audit, open audit paras etc. can be used to develop the model
11.	Internal Audits	Risk based Audits	<ul style="list-style-type: none"> Identification of auditee institutes for Internal Audits based on their risk profile. Parameters such as date of last audit, open audit paras etc. can be used to develop the model
12.	Purchase & Inventory	Pricing Analytics	<ul style="list-style-type: none"> Pricing analytics based on requisition of goods and quotations submitted by the vendors
13.	Purchase & Inventory	Expenditure Analytics	<ul style="list-style-type: none"> Forecasting of departmental spending based on the historical PR and POs issued
14.	Grievance Management	Chatbots	<ul style="list-style-type: none"> Chatbots for addressing end user queries by simulating conversations with BSG agents

Note: the Bidder can propose additional use cases of emerging technologies for IFMIS Next Gen project that will be considered as value add as part of the technical bid evaluation.

4.4 IT Infrastructure and Network

4.4.1 Data Center Disaster Recovery Centre, Near Disaster Recovery Centre and Non Production Environments at MPSeDC sites

- As per state guidelines, the solution shall be hosted on MPSeDC's SDC infrastructure (DC, NDR & non-prod environment) at Bhopal and DR at NIC Bhubaneshwar all environments to be provided by SDC, MPSeDC).
- SDC will only provide Virtual Machines along with operating system (RHEL8.0), as infrastructure as a service (IaaS) - to the Department for IFMIS Next Gen. The details of SDC infrastructure are provided in section 10.
- A minimum of 350 compute cores for DC and DR each, shall be made available to the SI by CTA/ MPSeDC. Here 1 core would mean 2 vCPUs with 16 GB RAM and the underlying server is HPE Sy 480 Gen10 + Blade server with Intel Xeon-G 6338N CPU and PC4-3200 AA-R smart kit RAM.
- Bidder is expected to understand the RFP requirements and propose the infrastructure requirements as per the solution design proposed by the bidder. Based on the solution

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proposed, the bidder should provide the details of additional compute cores over and above the minimum provisioning of 350 compute cores for DC and DR each and include the same in their technical and commercial bids. The format for the same is included in the Technical bid template provided in section 18.8 and the Commercial bid template provided in 19.2 of Volume II of the RFP.

5. This additional requirement for compute core shall be considered as part of the Total Bid Value for evaluation purposes. The bidder should ensure that with this quantum of compute cores (minimum requirement plus any additional requirement proposed in the bid), the proposed solution ensures compliance with all RFP requirements and the required service levels as mentioned in the RFP. The bidder should also ensure that the proposed solution architecture is optimized to cater to varying workloads and ensure optimal utilization of the underlying infrastructure.
6. RAM would be provided in the ratio of 1:16 (16 GB per compute core). However, in case the SI asks for additional RAM beyond the minimum requirements specified in the RFP i.e. 350 compute cores with 5600 RAM for DC & DR each, the bidder is required to quote the same in the form of additional compute cores in the ratio of 1:16 (16 GB RAM per compute core) in the commercial bid format.
7. Bidder is required to provide the breakup of the 350 compute cores in the commercial bid format (column C of sheet 'DCDR Requirements') and provide additional cores required in column E of sheet 'DCDR Requirements' of the commercial bid format. The total of Column C will be a notional cost and will not be a part of commercial bid. Only cost of additional compute cores given in column E will be calculated as a part of Commercial Bid.
8. However, if at any point during the contract, SI requests for additional compute cores the same may be made available, after validation and requirement finalization by CTA/MPSeDC. CTA may decide to recover the equivalent value for these additional cores from the SI at the same rate (for each compute core) provided in the Commercial bid format.
9. In case of additional compute requirements arising out of new requirements or changes in RFP scope not attributable to the bidder, the cost of such additional compute requirements will not be borne by the SI.
10. The SI shall identify a resource to coordinate with MPSeDC for all activities related to IFMIS Next Gen.
11. The DR site will be provided by SDC at NIC Bhubaneshwar and will operate at 100% capacity of the Data Centre.
12. SI shall evaluate and share the requirements for DC, DR based on hardware sizing and other necessary sizing parameters with SDC. SDC shall provision the said parameters as per the requirements shared by SI.
13. At an indicative level, the following environments be provisioned for IFMIS Next Gen by the MPSeDC

Environment	Minimum Compute Capacity (% of production environment)
Development & Test environment	25%

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Environment	Minimum Compute Capacity (% of production environment)
User Acceptance Test environment /Pre-Production/ Sandbox environment /Staging environment/training environment	25%
Production Environment	100%
Disaster Recovery Environment	100%

Table 13: Minimum Compute Capacity

14. 100% compute and 100% storage of the DC will be provisioned for the DR environment.
15. The SLMs are provided in section 8.2 and are applicable for IFMIS Next Gen operations from DC.
16. All environments will be provisioned on MPSeDC SDC. MPSeDC shall provide IT resources (Virtual Machines, Storage, RAM, Operating System and connectivity). The SI is expected to share the details of required IT resources in their Technical Proposal and its costing in Price Bid. As per agreement, SI will request for the required IT resources with SDC, at least 15 days prior or as per the timelines discussed with CTA and SDC. The production environment shall be provisioned on SDC's infrastructure as detailed in section 10.
- i. SLA monitoring tool will be provided by MPSeDC only for Infra monitoring, not for application level.
 - ii. NMS, EMS, ITSM tools provided by MPSeDC.
 - iii. SIEM to be provided by MPSeDC
 - iv. If any security H/W device, mentioned in IFMIS Next Gen RFP for security line items (4.4.1 point 23). , MPSeDC will provide the mentioned items.
 - v. Endpoint detection and response solution (EDR) will be provided by MPSeDC.
 - vi. CMDB (Configuration management Data Base) to be provided by MPSeDC
 - vii. MPSEDC to provide login for monitoring of hardware (VM level).
17. Performance and testing tool is available with MPSeDC, for infra level monitoring only Redundancy at database layer shall be provided for all business applications as following –
- The production database servers should be configured in HA mode with active-active cluster.
 - The development database server shall not be in high availability mode
18. Redundancy at application and web layer shall be provided for all business applications as following –
- The production app and web servers should be configured in High Availability mode with active-active cluster.

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- The pre-prod servers for application and web layer shall be deployed in high-availability and would be 25% of the size of the production servers.
19. The development application and web server shall not be in high-availability mode. The UAT and test environments shall not be in high-availability mode.
20. Details of SDC infrastructure, associated SLAs etc. are provided in section 10. The SI shall coordinate with SDC to resolve any problem and issues related to the Non Production, Near Disaster Recovery Site, DC & DR sites and resolution of SLA breaches.
21. Security measures at the infrastructure level shall be managed by MPSeDC. In the case of audits for hardware and hosted applications, the bidder is required to provide information regarding the software and database components, if necessary, with proper departmental approval.
22. At the time of contract signing, a consultation meeting will be organised between SI, MPSeDC and CTA officials to review the components proposed by SI and finalize the same. During the meeting, CTA, may procure decide to make available one or more components/tools/licenses (based on the availability) from MPSeDC/ Department based on the solution proposed by the SI and the availability at the time of contract signing. In such a case, the cost for the same (as quoted in the commercial bid of the SI) will not be paid to the SI. The Total Contract Value will be adjusted accordingly. For all such components made available from MPSeDC/ Department pursuant to this point, the SI shall be responsible for integrating the same with the overall IFMIS Next Gen solution at no additional cost to CTA.
- Bidders to note that the following components and the associated support, services will be provided by MPSeDC. Therefore, the bidder is not required to propose the same in their bid. For all the components made available from MPSeDC pursuant to the below table, the SI shall be responsible for integrating the same with the overall IFMIS Next Gen solution at no additional cost to CTA.

S. No.	Components	Requirements (Section of RFP Volume I)
1.	Advanced Persistent Threat Protection Solution	4.9.10
2.	Application Data Protection Software	4.9.2
3.	Database Security Solution	4.9.3
4.	Identity and Access Management Solution	4.9.1
5.	Intrusion Detection & Prevention System	4.9.6
6.	Secure Web Gateways	4.9.12
7.	Security Information & Event Management	4.9.8
8.	Enterprise Data Loss Prevention	4.9.9
9.	Web Application Firewall	4.9.7
10.	IT Service Management Tool	4.10.7
11.	Database Activity Monitoring	4.10.5 (17)

Bidders to also note that the following components and the associated support, services for production environment will also be provided by MPSeDC. Therefore, the bidders are not required to propose the same in their bid. However, the bidder is required to include the

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required units in the commercial bid – Sheet DC/DR Requirements. The total cost for the following components will be added to the total bid value only for evaluation purposes.

1.	Windows DC Edition 2019 or higher (with annual support)
2.	RHEL 8 Data Centre Edition or higher - Unlimited guest (with annual support)

- Bidder is responsible to provide the complete solution by proposing considering the above and proposing the remaining required software and hardware components along with the licenses, in their technical bid. The proposed solution should ensure compliance with all RFP requirements (functional, technical etc.) and comply with all the required service levels as mentioned in the RFP. The SI should ensure that the proposed solution architecture can be optimized to cater to varying workloads. MPSeDC will also be involved along with CTA office in the review of the proposed solution architecture design of IFMIS Next Gen.
- At the time of contract signing, a consultation meeting will be organized between SI, MPSeDC and CTA officials to review the remaining components proposed by SI and finalize the same. During the meeting, CTA, may decide to make available one or more components/tools/licenses (based on the availability) from MPSeDC/ Department based on the solution proposed by the SI and the availability at the time of contract signing. In such a case, the cost for the same (as quoted in the commercial bid of the SI) will not be paid to the SI. The Total Contract Value will be adjusted accordingly.
- Further, the following components and the associated support services for production environment will be made available by MPSeDC within 6 months of contract signing. SI will be responsible for integrating these components with the overall solution at no additional cost to CTA. Bidders to note that these components and the associated support, services will be provided by MPSeDC. Therefore, the bidder is not required to propose the same in their bid.

S. No.	Components	Requirements (Section of RFP Volume I)
1	Endpoint Detection and Response Solution	4.9.14
2	Performance and Security Testing Tool	As per point 4.9.5

Notwithstanding anything else stated in the RFP, these provisions supersede any other provision given in the RFP.

23. Following bandwidth requirements are already provisioned by CTA office currently –

- Dark Fibre from CTA office (Proposed Near site) to SDC (Proposed DC)
- Dark fiber is 100 Mbps from CTA DC to SDC and CTA DC to CTA DR is 50 Mbps
- MPLS circuit of 118 Mbps between CTA office to SDC
- Failover link of 118 Mbps and MPLS VPN of 118 Mbps

4.5 Any component (hardware or software) proposed by the bidder for operationalizing the proposed solution, over and above the components being provided by MPSeDC, shall be provisioned by the SI.User Layer

The key component of presentation layer would be a browser-based web application and mobile application accessible over internet. This would function as the single-entry point for IFMIS Next Gen application.

4.5.1 IFMIS Next Gen Users & Locations

The key users of the envisaged IFMIS Next Gen can be segregated into 4 key categories –

1. Government of Madhya Pradesh: This level of users primarily would include officials from the various departments of Govt. of Madhya Pradesh. These officials would be accessing and using IFMIS Next-Gen for various processing, reviewing, approving and monitoring purposes. The user base can be spread across –
 - a. Finance Department: The Finance Department, GoMP would be the nodal Department for IFMIS Next-Gen. It would process, approve, and monitor all receipts and expenditures of the State through treasuries. The department also looks after the allocation and monitoring of budget, assessing availability of funds for various schemes and monitoring the status of government investment in equities, loans, debentures, etc. Ensuring proper financial management and monitoring of audit also falls under the jurisdiction of the Finance Department. The key users of this Department would be spread across 5 key directorates –
 - i. Directorate of Treasuries and Accounts (including Divisional Joint Director Offices and Treasury Offices)
 - ii. Directorate of Pension, Provident Fund & Insurance (including officials at District Pension Payment Offices)
 - iii. Directorate of Financial Management Information System
 - iv. Directorate of Local Fund Audit
 - v. Directorate of Institutional Finance
 - b. Works Department: This will include key users (including self-drawing DDOs, who can self-approve the bills from their end and pass to treasury) from 5 key departments involved various works related activities across the State.
 - i. Public Works Department (PWD)
 - ii. Forest Department

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- iii. Public Health Engineering (PHE)
 - iv. Water Resources Department (WRD)
 - v. Rural Engineering Services (RES)
- c. Establishment/Non-Works Department: This will include users from departments other than Works Departments, such as Department of Education, Department of Culture, Fisheries Department, General Administration Department etc.
2. Accountant General (AG): The officials from AG would be involved in the activities related to accounts, audit, GPF withdrawal etc. in IFMIS Next-Gen. The system will have workflow and dedicated logins for Accountant General for approvals on Provident Fund withdrawal requests and reconciliation of GPF balances.
3. Organizational Users: This level of users primarily would include employees and pensioners who would access IFMIS Next-Gen, for functionalities related to, Pension and Provident Fund, Salary and Stipend etc. Access will also be given to the legal heir of deceased employee / pensioner to access requisite data.
4. External Users: This user group broadly covers vendors, and citizens, who shall have to access IFMIS Next Gen.
- a. Citizens and Vendors both will access IFMIS Next Gen (Cyber Treasury) for making online payment for various purposes viz. commercial tax (includes luxury tax, professional tax, other receipts etc.), payments for mineral resources concession fees, rents, and royalties and mines Department receipts), payment for firms and societies, payment for dividends and profits, payment/fees for Town and Country Planning Department, fees for educational institutes, loans and advances, Excise, law and court fee, various fines etc. Payment would be done through digital mode (Net Banking, Debit/Credit card-based transaction, payment gateway, e-Wallet, WhatsApp Pay, UPI Payment, e-RUPI etc.) integrated in the system. Moreover the system should also allow generation of a custom QR code (which can translate to the challan details, amount, purpose of payment etc) for quicker online payments by citizens and businesses.
 - b. Vendors or beneficiaries would also access IFMIS to get registered and onboarded as an accredited vendor for one or more Govt. bodies, submit invoices, track payments etc.
 - c. Beneficiaries would be given access, as required, to track the payments done to them in lieu of various benefits.

The envisaged system should allow the end user to login using multiple parameters such as Employee ID or Mobile number or email ID. Moreover, the system should allow users to switch between their Employee profile and the post specific profile seamlessly.

4.5.2 Access Channels

4.5.2.1 Web Portal

1. The presentation layer will determine the role of the individual who is accessing the application and the rights they have once they enter the IFMIS Next Gen application environment.
2. As part of this process, the service will perform all the required security authentication and authorization such as username/ password validation, CAPTCHAs, soft token, Aadhaar based login, digital signature verification (wherever required) to ensure that only valid users can access the application.
3. The portal would be accessed using any latest version of the standard web browsers and should be tested on all leading browsers.
4. The portal would be built with responsive web design, with emphasis on form factor screen design.
5. The portal would be customized for access through various digital devices such as PCs, Laptops, Tablets and smartphones.
6. The envisaged system should have tooltips and context sensitive help for users.
7. The application should be designed to ensure that it supports high performance and scalability
8. The application should have a provision to open the attachments on a document viewer and allow downloading of the same in multiple formats.
9. The portal should be developed in line with GIGW standards.

The technical specifications for the web portal are given below –

1. UI layer should not have its data.
2. The portal should not allow concurrent sessions for same user. The system should automatically log out a customer in case of session breakdowns (e.g., communication failure, high inactivity period - these should be parameterized)
3. The portal should support workflows
4. The portal should implement security features, such as password complexity, automatic blocking (temporary/permanent) of user logins after given number of unsuccessful login attempts (should be parameterized), controlled access to content stored on the portal and logging of security incidents. It should by its own or through an integrated Identity Management solution capable of managing security rights and privileges by individual, group and role. The SI should devise necessary policies, SOPs and protocols in this regard including the password management policy, access policy etc.
5. Portal should support HTTPS protocol on Secure Socket Layer (SSL).
6. The portal should be able to expose / publish functional applications seamlessly
7. The portal should provide search engine with advanced full-text search capabilities. The search engine should be able to search for requests within the portal.
8. The portal should provide support for comprehensive audit trail features such as:
 - a. Daily activities log should be merged into the history log files

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- b. Date, time and user-stamped transaction checklist should be on-line generated for different transactions
 - c. All transaction screens should display system information
 - d. Daily activity reports should be provided to highlight all the transactions being processed during the day
 - e. Unsuccessful attempts to log-in to the system should be recorded
10. Portal should be interoperable with industry standard databases
11. In addition, the portal should provide the following capabilities
- a. Should have multilingual capabilities (English and Hindi) with regional, localization and Unicode support.
 - b. Should be able to integrate with common office applications
 - c. Should authenticate users from Active Directory/LDAP, claim based authentication
 - d. Should support virtualization
 - e. Should support customization of look and feel of the portal
 - f. Should support a broad range of standards as listed in section 5.5. The envisaged system should also comply with GoMP's guidelines for websites.
12. Should integrate with standard email services
13. Should integrate with any other portal products through open standards such as HTML, XML, RSS, web services, and WSRP.
14. Should support encryption and compression features
15. Should support multiple roles with associated access controls.
16. Should support upload, store, organize and share documents. The solution shall support various formats for upload of documents with a pre-defined threshold of file size. An indicative list of supporting files could be PDF, JPG, GIF, BMP, PNG etc. This shall be decided in consultation with CTA.
17. Should provide multi-channel output capabilities
18. Users should be able to upload documents in multiple formats
19. Users should be able to upload multiple files at the same time
20. Should support version control, change tracking and comments in these documents
- a. Should support document linking capabilities (static, dynamic, and/or other)
 - b. Should support the import of content into the repository
 - c. Should support document and text indexing capabilities
 - d. Should support image indexing capabilities
 - e. Should support managed metadata
 - f. Should support content archiving capabilities
 - g. Should support creation of ad hoc query by users

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4.5.2.2 Mobile Application

The Mobile App for IFMIS Next Gen would contain functionalities pertaining to task lists, process/compliance monitoring, and MIS/Dashboard view and other functionalities as specified in section 3.12.5. Mobile functionalities would be available users based on their role – Employees, Financial users, Auditors, Pensioners, Citizens, Vendor, Beneficiaries etc. The application should allow the users to approve, forward tasks as per their user roles.

The mobile app would be hybrid app – with versions for iOS and Android OS. Furthermore, feasibility of using solutions for maintaining a common codebase and cross platform solutions should also be evaluated. Some of the key requirements related to mobile application, but not limited to, have been mentioned below –

1. The Mobile Application should provide an intuitive and user-friendly GUI that enables users to navigate and apply actions with ease. The GUI should be responsive with very little or no delays or time lag at launch or whilst navigating through screens.
2. It should enable ease of configuration and changes to existing GUIs and support the introduction of new screens.
3. It should provide on screen tips and online help to aid users while interacting with it.
4. Should be enabled with validation on duplicate data entry
5. Mobile app, should have provision to track and identify users' usage and actions
6. Network level security, traffic should be encrypted using secured connectivity
7. Should structure overall content with proper tagging to make them screen reader friendly.
8. Application should ensure Compatibility with all platforms such as Windows, Android, Mac iOS etc.
9. Solution should develop resolution independent design structure i.e. mobile application should adjust itself automatically as per the screen resolution of the Mobile
10. There should be minimum use flash contents so that home page should be loaded quickly
11. It should not occupy excess client's Mobile RAM.
12. Should provide Role Based Access control
13. Should come with mobile threat prevention and recovery system
14. Should support authentication using digital signatures
15. Should have facility to download and upload files, including e Forms
16. Should structure overall content with proper tagging to make the content screen reader friendly.
17. Solution should develop resolution independent design structure i.e. mobile application should adjust itself automatically as per the screen resolution of the mobile device.
18. Should have the capability to take advantage of mobile devices' native capabilities, such as touch screen, facial recognition, and fingerprint access.
19. Should be able to track and capture all events including data copy from application and screenshots, at console.
20. It should be ensured that the mobile applications are free from different attacks like local storage, user data harvesting, activity spying, unauthorized event injection, UI

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- jacking, traffic redirection, logical attacks, hard coded keys and OWASP (Open Web Application Security Project) mobile vulnerabilities.
21. The app should be enabled with analytics mechanism to track and identify user experience and actions.
 22. App should be able to accommodate the future scalability requirements.
 23. Network level security, traffic to be encrypted using secured connectivity.
 24. The SI shall design the app to optimize the storage disk space and memory required for the proposed App.
 25. The app should be equipped to utilize native capabilities of the device like location services
 26. The app should be free of cost to the end user and there should be no running cost associated with the same..
 27. Resolution Independent Mobile App Structure.
 28. The mobile application should be developed in line with GIGW standards.

4.5.2.3 Business Support & Grievance Cell

1. IFMIS Next-Gen would be enabled with Chatbot for providing round the clock access channels to all the users, for their application support and issue resolution.
2. In similar way, Chatbots would be implemented in the IFMIS Next-Gen that would allow users to chat and based on their queries/issues , the chat window would provide responses as per the data stored. Gradually, the Chatbots can be enhanced leveraging AI/ML to prompt responses beyond the repository as well.

4.5.3 Presentation

IFMIS Next Gen should be equipped with functionalities for Enterprise Search, Reporting and Dashboards as per the requirements given in section 3.12.4

4.5.4 Authentication, Authorization / Access Management

1. System shall facilitate user security administration activities in terms of creation of user ids, user profiles, attaching the user profiles to the user ids, modification of user privileges etc.
2. The envisaged system should support secure access through multi-factor authentication.
3. The envisaged system should support biometric (Fingerprint) authentication for login and verification of transactions.
4. The authentication and authorization design should comply with Government of Madhya Pradesh, as well as Government of India's security policies and guidelines and any other best practices followed in financial systems.
5. System shall maintain audit trails for all the activities performed by privileged user in the system for user administration, database management, business rule changes, and

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changes based on Finance Act, system upgrades etc. Such audit trails, at a minimum, shall capture the details of name of the user, changes made, date of changes, name of approver (if applicable) etc.

6. Password Management services must enforce password restrictions, which include the criteria and limitations that can be placed on passwords to increase security. It should provide features such as periodic forced changes, not reusable, hard to guess, complex passwords – including letters, numbers and special characters, mobile passcodes, OTP etc. to improve security.
7. Unsuccessful user login requests should be logged for investigative purposes in case of a security breach
8. The application must monitor unauthorized attempts to access the system. The solution should be capable of secure, tamper proof auditing and logging which can stand in the court of law through implementation of advanced features.
9. The system shall create users IDs and manage them on a central user repository. The information of internal users (officials of Government of Madhya Pradesh) should be fed into system to by admin officials and the system would register them as valid official users with unique login credentials. Also, system shall define their access rights to various functionalities for various types of users.
10. System is required to implement multi factor authentication for authenticating external users with OTPs sent over registered mobile numbers after user-id and password-based authentication.
11. Additional authentication mechanisms like soft tokens should be provided to Treasury officers to approve large value transactions above a certain threshold.
12. MAC and IP binding feature with specific roles for security should be enabled in the envisaged system.
13. The envisaged system should enable secure login provisions for Employee ID and Non-Employee ID users.
14. The envisaged system should allow usage of TOTP/authenticators for login.

4.5.5 RBAC (Role Based Access Controls)

1. Role-based access control should exist to ensure access to information resources and functionality controls, as well as forwarding rights be granted on need basis, and to prevent unauthorized entities from accessing sensitive information resources through IFMIS Next-Gen.
2. All access requests require authorization based on limits to be defined by Competent Authority of a Department. Any response to such requests should be in compliance with FD/GoMP Information Security policies and guidelines.

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3. System shall facilitate user security administration activities in terms of creation of user ids, user profiles, attaching the user profiles to the user ids, modification of user privileges etc.

4.5.6 Digital Experience Platform

1. The solution shall have the facility to create forms using static and dynamic components including but not limited to text box, radio buttons, check/uncheck boxes, list box, dropdown box, attachments, command buttons, rich text box, dynamic tables, captcha, electronic signature, tabs, calculative fields etc.
2. The solution must have a provision to save the form in offline mode and to fill an offline/online form in stages.
3. The solution shall support various formats for upload of scanned documents attached with the e-form. An indicative list of supporting files could be PDF, JPG, GIF, PNG etc. The envisaged system should enable upload file limit or 5 Mb or otherwise as finalized with CTA officials based on the underlying module.
4. The envisaged system should allow Aadhaar e-sign and DSC based signing.
5. The solution must provide capability to manage complex and large forms. It must allow to break form into logical fragments and configure to loading of fragments rather than complete form.
6. The solution should have the ability to secure the document (for both online and offline forms) using integrated electronic signature capability to let end users sign the submitted forms using Aadhaar based e-Signing or OTP based signing or DSC.

4.6 Integration Layer

IFMIS Next Gen system would be integrated with multiple external systems, and services, primarily through private/closed APIs. All data transfer to happen through Rest APIs – these would be preferred mode for integrating with external systems (Refer section 3.11 – for coverage on external applications/systems with which IFMIS Next-Gen is expected to get integrated), as well as integration between various functional components within the application layer.

Following are some of the major integration considerations for IFMIS Next-Gen

- IFMIS Next Gen Integration Architecture will use an API Gateway for external integrations
- API Registry to document and show status of all APIs
- System would enable both time-based and event-based triggers

Some of the major requirements and specifications for integration that has to be kept in consideration for architecture design:

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- API layer would be exposed to trusted connection - APIs are going to be the preferred mode of external integrations
- Secure File Transfer mechanism will be considered if a specific requirement of any stakeholder or needed for payment file transfer/processing
- All the APIs capable of seamless functioning and load balancing, even at the time of higher hits through portal and requirement of high-end processing
- The system should be developed with an API Platform that would allow to manage all the enterprise level integration from a single solution
- The API platform should support existing APIs that are already integrated with current IFMIS system
- The API Platform should provide clustering and ensure reliability, scalability, and single point of administration
- The API Platform should provide for enterprise grade encryption
- The API platform should provide secure access to all APIs and provide all the forms of authentication, access control and certificate/credential support
- Data should be hashed before transmitted through APIs
- An API design document with the specification would be shared with the stakeholders for them to start developing the interfaces. The APIs would be RESTful services with XML/JSON payload and document would cover key information such as purpose of the API, input and output parameter, error code, owners etc.
- There should be authorization and license key management feature to publish APIs
- Version control and API retirement should be taken into consideration for implementation of integration layer
- The framework should have the capability for API Governance and SLA enforcement
- Features like Audit trail, API usage, API metering should be provided
- API Manager and gateway should support deployment in container environment for Microservices architecture and auto scale capability.
- Dashboards should be implemented for all API calls across departments to monitor and assess the success and failure rates of each API at the departmental level.

4.6.1 API Manager

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IFMIS Next Gen system would be integrated with multiple external systems, and services, along with significant internal API driven integration between functional components. To ensure simplified integration management of IFMIS Next Gen internally or externally through API, and also managing and monitoring APIs during Enhancement, and Operational and Maintenance (O&M) purposes – an API Manager, GUI- enabled tool should be provisioned by the SI. This would function as a part of Integration Layer for delivering better management of integration and security. Key requirements for the envisaged API manager has been given below

1. The API management tool should be a GUI-enabled tool, for ease of use, and seamless monitoring
2. API Monitoring through dashboards and reports
 - a. It should be enabled with a dashboard to display key parameters pertaining to each of the API on for ease of monitoring
 - b. Few suggested parameters pertaining to internal/external APIs that can be displayed on dashboard
 - Memory Usage
 - CPU Usage
 - API Uptime
 - Request Per Minute (RPM)
 - Average and Max Latency
 - Errors Per Minute
 - Failure Rate
 - HTTP Status Code
 - Any other API parameter deemed suitable by application development team for monitoring
3. API Publishing/Inclusion
 - a. The solution should be able to create, and generate the back-end API for IFMIS Next-Gen, from filling the parameters and values such as :
 - API Specification
 - API Display Name
 - API Description
 - URL Scheme and Suffix details
 - Base URL
 - Tags
 - Gateway types viz. Managed or Self-Hosted
 - Versions etc.
 - b. The user should be able to Publish, IFMIX Next-Gen API for external consumption and integration in the similar approach
 - c. The solution should have provisions for Auto-Discovery - it should be able to manage an API from API Manager by pairing the deployed application to an API created on the platform
4. Modification of API Parameters

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- a. The solution should be capable to modify and change parameters of existing Internal API through filling the required values in front-end
 - b. The solution should provide functionalities to create, edit/amend, and manage API Proxies (for uninterrupted development)
 - c. The solution should have provisions to update the API parameters at IFMIS Next-Gen end, basis change in any external APIs
5. Debugging APIs
- a. Solution should allow user to track, inspect, test and trace requests (In-bound, out-bound, and Back-end) passing through the API, for debugging and troubleshooting API
 - b. The solution should be capable of managing all IFMIS Next-Gen APIs behind a single domain, and setup the security of APIs with keys, tokens, required encryption and signatures, and IP filtering.
 - c. Connecting on-premises APIs to cloud services or other external services by creating a façade for safe integration

4.7 Business Logic/Application Layer

This layer would handle the most complex and fundamental aspects of the IFMIS Next-Gen portal solution. The business logic will include the business rules and workflow required to deliver the services accessed through the portal. This set of rules and logic will be defined within the envisaged applications.

The goal is to build a Service-based or Service-driven architecture, with emphasis on ensuring modularity of functions/processes, and data remains within the purview of a specific Governing body. This will ensure that changes, and enhancements are done without disruptions to other services, and quicker deployment. The functionalities/services have been categorized across the focus area or basis same Governance/Domain body.

4.7.1 Server Software & Configuration

Below given diagram, represents the three-tier environment, for the IFMIS Next-Gen implementation. In this model, the client provides the user interface logic, the business rules are separated to the middle tier, and the database is the information repository. The client does not access the database directly. Instead, the client makes a call to the application/transaction Server on the middle tier, which then accesses the database server.

Below given are the key technical specifications for the application and web server implementation, for the envisaged IFMIS Next-Gen –

1. Workload Management: The solution should have ability to distribute client requests across multiple transaction servers
2. The SI should provision an application server software to enable interaction between the end user and server-side application code.

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3. The application server software should generate and deliver dynamic content, such as transaction output, decision support output, or real-time analytics.
4. Architecture Support: The solution should support
 - a. Stand-alone mode with sever management console
 - b. Third party integration of LDA
 - c. Third party integration of messaging infrastructures
5. Solution should provide compatible integration with REST API/RESTful Web Services, XML-Based Web: Services, Enterprise Web Services, XML-Based RPC etc.
6. System should be designed with mechanism (SMS Gateway and Email Server) to trigger notifications and alerts through SMS, WhatsApp, Email, flash messages to the registered mobile number and email ID and also Push notifications through mobile app.
7. Monitoring & Administration: The solution shall provide:
 - a. Key functionalities like Reliability, Availability, Scalability and Performance combined with easy manageability features
 - b. Simplified, integrated, centralized administration, management and monitoring tool. There shall be a unified configuration & management
 - c. Distributed management tool for asynchronous remote multi-domain and multi-server management. Shall also provide runtime performance monitoring and diagnostic tool. Tools for transaction configuration and monitoring.
 - d. It should support analysis of heap dump, memory leaks and threads.
8. The solution shall have ability to keep history of change and rollback configuration of the Application Server.
9. Scalability: The solution should support
 - a. Vertical scalability and Horizontal scalability
 - b. Mechanism for on-demand resource allocations - dynamic clusters (ability of the server to dynamically add new machines or remove them to / from the cluster when workload changes). It shall also be capable of managing extra-large installs of hundreds or thousands of servers and from a single console or command line.
 - c. Scalable architecture to support clustering at each layer i.e. Web server, Application server for Fault Tolerance & Load Balancing
10. Security: The solution should have
 - a. Capability to have separate administrative roles and limit scope of actions (superuser, monitor, configurator, operator)
 - b. Secure administration of a clustered server environment
11. Webserver Specifications:
 - a. Shall support integrated Web server solution with request queuing and caching
 - b. Shall support load balancing
 - c. Shall have the ability to store web server configuration data in XML or plain text.

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- d. Shall support web-based administration
- e. Supports industry standard Lightweight Third-Party Authentication (LDAP)
- f. Shall support integration with certificate services
- g. Deliver web content like HTML pages, files, images, video in response to requests from a web browser.

4.7.2 Business Process and Rules Management

1. System would provide a GUI based mechanism that would allow designated nodal officers/admin officers of the IFMIS Next-Gen to add, edit, amend, and deactivate various business rules and its key parameters viz. System can provide provision to the competent authority to edit/update threshold value of bill amount and claimant Department's name, to define and declare level-1 prioritization criteria and get the bill routed accordingly to a treasury
2. The envisaged system should be equipped with workflows (including some complex ones) efficiently, with possible routing/ exchange of information, and involving all the stakeholders of the system along with CTA users. The workflows should be flexible enough to allow upward flow and downward flow of processes and inclusion of new actors which can be done through changes in configuration. All these factors – dynamism of business requirements, need for multi-users and complex workflows, high frequency of business processes getting executed, involvement of multiple stakeholders in a business process/ workflow, would require a BPM in the overall architecture of the solution.
3. The proposed solution should have the provision of regular monitoring of different business processes as meaningful dashboards. It should generate various standard and ad-hoc reports in multiple document formats e.g. .xlsx, .docx, .pptx, pdf, html etc, decided in consultation with CTA. These reports should be integrated with the overall Business Intelligence (BI) solution.
4. The proposed solution should support automated message and information routing capabilities based on pre-defined rules like sequential routing, parallel routing, rule based routing etc.
5. The task allocation methods should be through pull or push model in offering or allocating mode randomly or in round-robin mechanism, whichever is the most effective method according to industry standards.
6. The proposed solution should have capabilities to allocate and distribute generated tasks to users and user groups.

4.7.3 Alerts & Notifications

As per requirements given in section 3.12.3. The SI can leverage existing exchange server or can provision any other opensource software having same features to cater to the

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requirements provided in section 3.12.3. Any additional licenses will have to be procured by the SI based on their sizing estimates.

4.7.4 Robotic Process Automation

The SI shall provision RPA tools for automation of various processes within IFMIS Next Gen. The minimum specification of such tools is provided below –

1. The RPA tool should have a centrally controlled environment for managing the processes.
2. The tool should be secure and with the capability to encrypt data.
3. SI shall ensure data consistency, data output, data security and data control for the services identified for RPA
4. The SI shall identify components for building and accustoming, testing, releasing and controlling processes. The RPA tool shall be able to schedule/re-schedule processes and runtime resources.
5. The SI shall study and automate identified processes using the tools and utilities.
6. The SI shall ensure that the RPA solution is code free i.e. software bots are configured through demonstrative steps (no coding involved)
7. The SI shall ensure providing, reporting and analytics tools in respect of the processes automated.
8. The tool should ensure that the RPA solution operates on any user interface or OS.
9. The RPA solution should have version control.
10. SI to publish a dashboard for % automation achieved.

4.7.5 Document Management System

The Document Management System (DMS) would provide a supportive system for storing/managing document generated as an output of all the major building functionalities and services discussed in the previous sections. The DMS would also manage the supporting document submitted for various purposes on the IFMIS Next-Gen portal along with their forms. The key requirements of DMS for IFMIS Next-Gen are –

1. To design and develop a mechanism to track, manage and store documents submitted or generated by the system
2. System should be capable of seamless document upload/download
3. This system should be capable of keeping a record of the various versions of the documents created and modified by different users (history tracking).

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4. System should allow the documents to get indexed or tagged with different parameters, keywords or search terms
5. This would include, developing and designing an Integrated Document Repository that would be accessible to the users (competent authorities) who are responsible for proposal review, processing, approving and compliance.
6. The envisaged system should allow collaboration and generation of alerts and notifications to relevant users.
7. The document repository would primarily contain the supportive documents uploaded/submitted by applicants during application or compliance processes
8. The document management system would function as a document repository for legacy data. The repository would store the scanned version of physical documents for ease of future references
 - i. There would be mechanism available for uploading data into the portal with mandatory appropriate tags and keywords – for future ease of storage and retrieval.
 - ii. The user can choose the tags such as type of clearance, year of issuing clearance, type of document (clearance/compliance)
9. The DMS should have provision for document search based on index/tag keywords, document content and meta data search
10. The system should ensure the stored document remains secure from the access of non-registered users of IFMIS Next-Gen and users without user rights of accessing DMS.
11. The DMS should maintain audit trail of changes done to the documents stored.
12. The SI shall also provision the DMS for legacy document upload and support the migration of the same.
13. System to keep a copy of all the e-signed paid bills (voucher) under DMS. AG-MP to be provided facility to access and download these vouchers and to be archived for minimum 10 years in IFMIS Next Gen.

4.7.6 Digital Signature & E-Sign

The system should be designed to incorporate authentication of the IFMIS Next-Gen users (as per CCA guidelines of Govt. of India and e-hastakshar, published by GoI) primarily for following scenarios:

- System should have provisions for implementing Digital Signature Certificates & Aadhaar E Sign along with username / password, for secured access
- MP Govt officials involved in reviewing, and processing, would authenticate and approve through Digital Signature & E-Sign

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- This would be a key component also in the security layer as described in section 4.9

4.7.7 Content Management System

It is proposed to collaborate for content creation, approvals, management, retention, and publishing across internet, intranet assets. The tool should allow development of web forms and enterprise content to ensure efficient data submission through online medium. The tools should have provisions should be made for secure content management.

The solution should provide the following functionalities –

1. Provide complete content management that includes content creation, management and publication.
2. Provide a collaborative environment that allows multiple users to work together and complete review and approval workflow processes.
3. Provide review and approval capabilities, automatic expiration of old content.
4. Supports content creation in multiple ways using WYSIWYG rich text editors or by importing from other applications like Microsoft Office. It also allows HTML forms to be directly imported.
5. The system supports versioning of content.
6. The system supports storage of content in relational database.
7. The system supports creation of site frameworks which is a similar concept to the "site map" of a traditional Web site. Whereas a site map is based on a directory structure or the links between pages in a Web site, a site framework consists of a set of Content Management items. Each site framework consists of a single site under which a set of site areas and content items are grouped.
8. The system provides profiling and metadata features to group content items for easy retrieval.
9. Provide configuring workflow to manage the lifecycle of content. The lifecycle includes authoring, aggregation, review, approval and publication of content.
10. The SI shall define and configure the content upload limits as 20 Mb or more or otherwise as decided in consultation with CTA. The envisaged system should support upload of videos, documents such as training manuals and etc.

4.7.8 LMS

1. The solution deployed should ensure administration, documentation, tracking, reporting and delivery of educational courses or training programs to respective user groups.

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2. The e-learning module should have tailor-made content for various proficiency levels like beginner, advance, and expert.
3. The solution should provide training suggestions based on candidate profile.
4. The content should be a balanced mix of audio, videos, simulations, animations etc.
5. The envisaged system should record feedback of the trainees for all e-lessons conducted and provide an analysis of the feedback as and when requested.
6. The e-learning module shall also provide e-lessons with assessments and tests, the completion of which has to be mandated for course completion.
7. The e-learning lessons shall allow the user to monitor progress of the e-lesson. However the user shall not be allowed to skip content.
8. The envisaged system shall auto-assign trainings to new users as per defined processes in consultation with CTA.
9. The LMS shall also maintain detailed training records for each trainee including information like date of completion, assessment score (if applicable) etc. The envisaged system should be able to provide relevant records upon querying, to the authorized CTA users and issue alerts and notifications as agreed upon with CTA and configured in the system.
10. The e-learning lessons must be created in such a way that ensures widespread access and compatibility for users across GoMP and SI.
11. The e-lessons developed also should be of cross platform compatibility and also compatible with major browsers.
12. The e-learning lessons shall allow the user to monitor progress of the e-lesson. However the user shall not be allowed to skip content.
13. The solution should be equipped with a test engine for tracking and administration of online tests to select courses.
14. The solution should have the capability to generate virtual certificates and administer assessments or tests to the trainees.
15. The design, naming conventions, file organization (size and type etc.), Functional Requirements, Content formation, Content presentation and placement of objects should be done as per the guidelines of the department.
16. Functionalities related to candidate application and accounts exam for ATS should be customized by the SI.

4.8 Data Layer

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All the data pertaining to financial processing (governed by the Finance Act and Rules of Govt. of Madhya Pradesh) and operations within IFMIS Next-Gen will be stored in this database layer along with transaction data.

The key functional considerations of the Data Layer is given below: -

1. The database layer would act as the “Single Source of Information” with respect to IFMIS Next Gen processes and operations.
2. The data layer should provide features such as best in class information security, high scalability, ease of manageability, maximum availability, high performance, DB migration etc.
3. The databases would be designed with emphasis given to aligning them to specific domain/function area to ensure control and governance of data remain with competent authority. Broadly the databases in the layer can be segregated across following domain areas –
 - Common Financial Services
 - Local Fund Audit
 - Pension & NPS
 - User & Access Rights
 - IFMIS Operations
 - Meta Data/Master Data
4. Database security will allow for privileged access to access database.
5. Audit trail will be maintained for any change in database structure or records.
6. There will be separate file storage system for storing candidate photo, signature & other related documents.
7. There will be separate backup database to enable auto backup system from prod. DB

4.8.1 Data Warehouse Solution

The SI is expected to implement a data warehouse for reporting, dashboarding and analytics. SI to note that the operational reports should be extracted from the transactional system and management reports and analytics should be from Data warehouse. The data warehouse should be hosted on a separate server. However the information / view layer for all reports should be common and seamless for the end user. The SI should plan the management and archival of the data in such a way that it does not impact the transactional data, but it is available for analytics. The reports should be generated from a separate schema /database. The envisaged system should allow replication from OLTP to report schema. The data warehouse may also ingest data from external data sources, hence an ETL tool with heterogeneous database may be proposed by the bidder.

The primary role of the Data warehouse will be the repository of structured, semi-structured data for IFMIS Next-Gen. The purpose is to store data in a single integrated data format, designed to promote cross-functional usage and exploit right data from right platform thereby creating “a single view of business”. Depending on the solution designed, the layer should contain aggregates, dimensions, facts or can store data based on various subject areas, enabling IFMIS Next Gen to easily grow as the entities and attributes are added in future. The

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Data warehouse envisages to create a common Data Model to capture key information. The data model would link the historical information, related entities.

1. The data-warehousing platform should have the capability to handle incremental load at various frequencies (daily, monthly, near real time etc.)
2. The data-warehousing platform should have the ability to understand, map and define rules for migration from different sources.
3. The proposed solution should have data quality and data profiling capacities.
4. Data cleansing techniques should be included to clean data at all levels.
5. The tool should be capable to handle Extraction, Transformation and Loading (ETL) of structured data from various data sources.
6. The proposed solution should create a single source of truth by integrating disparate data from multiple sources and use that for analysis
7. The proposed solution should have embedded advanced analytics and statistical tools capable of performing advanced statistical modelling and analysis on high volume data (including but not limited to regressions, ANOVA, clustering etc.)
8. The proposed solution should be capable of search based data discovery
9. The proposed solution should be able to convert input data like address/postal code/landmarks etc. into geographical co-ordinates which can be used for visualization, analysis, reporting and risk profiling purposes
10. The proposed solution should have support for large data sources. The solution should be able to analyse large volume of data and generate visualizations on the fly, without any performance degradation.
11. The proposed solution should allow for connectivity with proposed database. Compatibility to leading standard operating system(s) is must
12. The proposed solution should be capable of machine learning to assist in fine-tuning the models from analysis of related events, feedback and outcomes and help the user take informed decisions

Below given are the key technical specifications for the database server solution for the envisaged IFMIS Next-Gen:

1. The solution should be capable of supporting 64-bit architecture and be available and function in multiple operating systems like Linux, Unix, and Windows
2. The solution should have ability to service concurrent multiple read and write requests without the need of building separate replicated environments.

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3. The server should have the ability to handle deadlock situations, without any application slowing.
4. Should have built-in parallelism, Backup & Recovery feature, Disaster Recovery Feature, recovery for tables, rows accidentally deleted, queue mechanism to transfer data across to other databases
5. The database software should be able to scale up multiple terabytes in decentralized and centralized environment. The database should be able to store gigabytes of data in single row.
6. Should be able to provide database level storage management mechanism, which should enable the availability by means of creating redundancy, automatically balance the data files across the available disks, I/O balancing across the available disks for the database for performance, availability and management.
7. Database should have native, active-active clustering with objectives of scalability and availability of 24x7.
8. The solution should support vertical & horizontal scalability with minimal downtime and without repartitioning or changes to the database objects or 3rd party transaction routing mechanisms.
9. The database should provide concurrent access from multiple servers to the single database image.
10. Database should have Automated/manual performance analysis with detailed diagnosis of the cause of performance related issues with possible resolutions.
11. Database should have option for Automated/manual identification and tuning of high load SQL Statements. Provide details about dynamic tuning capability of the database depending on workload requirement, system resources etc.
12. Should provide Single system management view for database / database cluster. Should be using client independent, centralized database management console over network for monitoring hardware, operating system and database resources.
13. Should be having built-in provision to Administer database / database clusters, monitor performance, maintain database, backup and recovery, Disaster recovery management, diagnosis, performance tuning with the SQL analysis, finding the events, advisory based tuning mechanisms with the history.
14. Database administrators or high privileged users like DBA or system administrators should not have access to the transactional data. The separation of duties must be configured for database.
15. The solution should have the ability to restrict data access through application by-pass.

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16. Database should allow encryption of data at rest, encryption of columns, file encryption at storage, backups and data encryption in transit over the network.
17. The solution should provide key vault to manage encryption keys.
18. The solution should provide database firewall for prevention from SQL injections and ability to create white and black lists for accepted and rejected DML operations.
19. The solution should provide row level data security based on user credentials.
20. The solution should support policy based auditing
21. The Database must provide horizontal scalability and vertical scalability

4.8.2 Data Integration & Quality Tool

1. The solution shall have the facility to extract data from multiple data sources, transform the data to make it accessible for analysis, and load the same to multiple target(s) if needed.
2. The solution should have the facility to configure ready to use library of transformation routines such as data type conversions such as string to numeric, numeric to string, other string manipulations and simple calculations.
3. The solution should provide the facility for error handling and reporting through alerts for the likes of data related errors and tool related errors producing an event log containing information like time/status of operation/reason for failure etc.
4. The solution should have the facility to profile data within the data quality, name and address enrichments tools and then directly use those results for cleansing and parsing.
5. The solution should provide the facility of configuring and using user defined rules for data validation. There should also be a provision to create and maintain custom dictionaries.
6. The solution should have ability to provide some degree of validation on multiple fields such as email address (domain-level or user-level) and other fields.
7. The solution should be able to define and update rules for sufficiency, correctness and enrichment of input data. For e.g. the tool should check for the presence of the pin code in the address provided, update the same using other address fields in case the pin code is absent or validate the pin code provided against the standard dictionary.
8. The solution should also have the following functionalities –
 - a. Facility to decompose text fields into component parts

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- b. Formatting input values in consistent and standard layouts
- c. Generate output files in multiple formats
- d. Capability to secure sensitive data by data masking techniques / algorithms so as to facilitate development and testing efforts without compromising data security
- e. Facility to log and notify the designated users by email on the status of various processing such as data extraction, transformation, validation, enrichment etc.

4.8.3 Analytics Workbench

- 1. The SI shall provision an Analytics workbench to allow analytical modelling, data analysis, generating reports etc. The purpose of the workbench will be to apply advanced analytics swiftly to the data and extract intelligence from this data.
- 2. The Analytics Workbench should allow to create prototypes and models to address specific needs.
- 3. The Analytics workbench should provide support for varied data types and disparate data sources.
- 4. Access to data at rest and transit should be secured.
- 5. The workbench should have the ability to handle large volumes of data, wide variety of data and complex processing of the data.
- 6. After the data is ingested, processed and trained, the workbench should be integrated with the BI tool for visualization.
- 7. The proposed solution should be capable of anomaly detection (outlier detection) to identify unusual values that might be data error or issue that requires further verification.
- 8. The workbench should allow functionalities listed in section 3.12.4.
- 9. The SI shall perform data analysis and develop analytical model/algorithms for forecasting to inform decision making, for selected business uses cases such as the following –
 - a. Macroeconomics forecasting
 - b. Cash flow prediction
 - c. Budget planning and execution analysis
 - d. Cash flow projection versus expenditure analysis
 - e. Payment analysis

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- f. Accounting mis posting classification analysis
- g. Transactions classification analysis

4.8.4 Analytics and BI Solution

- 1. The proposed solution should have robust interactive visualizations such as graphs, charts, and histograms
- 2. The proposed solution should be able to provide reports around geographic, spatial and time context. The tool should also support more advanced capabilities of layering of custom base maps, markers, heat maps etc. on geospatial data.
- 3. The MIS reports generated by the proposed solution shall contain the name of the person generating the report along with date and timestamp in form of watermark
- 4. The reporting tool should have basic statistical modelling properties, so that users can create clusters, regression analysis, and other modelling techniques dynamically.
- 5. The reporting tool should provide the output data in various formats including but not limited to xls, pdf, doc etc
- 6. The interface for the authorized users should be web browser based and simple with user friendly features such as drop down list, drag and drop utilities etc., and should be built with focus on users with elementary statistical knowledge
- 7. The proposed solution should be capable of seamless integration with leading office tools, both for import and export of data and reports in multiple formats. The solution should allow data to be accessed from any industry standard data source using native connectors. It should also allow data load jobs to be scheduled to automate the process of loading data into the system for analysis.
- 8. The proposed solution should have the ability to format (page size, row, columns, fonts, colors, tables etc.), allow data manipulation (slice and dice multidimensional data on the fly, pivoting, sorting, ranking, rearranging columns, etc.). The solution should have drill-down capabilities (ability to drill down to various levels of a hierarchy).
- 9. Solution should be capable of generating highly formatted, interactive reports/ dashboards with or without parameters. Should also have strong ad hoc report generating capabilities
- 10. The proposed solution should have the capability of raising exception alarms (e.g. email notification). Should provide for exception reporting (ability to set certain thresholds).

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11. The proposed solution should have user friendly Graphical User Interface (GUI) to allow easy generation of reports and exporting capabilities (ability to export resulting data to other applications such as Excel, Notes, CSV.).
12. The proposed solution should be able to distribute reports and also have the ability to save data for later use. It should support offline viewing. It should be able to send reports electronically to other users.
13. The proposed solution should have the ability to schedule reports or generate ad-hoc reports.
14. The reports should also be available to authorized users through the mobile application. The tool should enable the organization to develop and deliver content to mobile devices in a publishing and/or interactive mode, and take advantage of mobile devices' native capabilities, such as touchscreen. The proposed solution should support all leading and popular mobile platforms such as Android, iOS.
15. The SI should import state maps and shape files into the BI tool. These files will be made available to the SI by CTA.
16. Additional location data required to create location-based visualizations would be provided by CTA. Using this data, the SI shall prepare location based visualizations and reports as desired by CTA.

4.8.5 Master Data Management

The key business requirements which Master Data Management shall try to address are as follows:

1. Create a master and maintain a single source of truth data when data may come from multiple sources. This will include reconciling/ resolving differences in attributes in both transactional data as well as master data and create a single source of truth. The envisaged system should seamlessly manage the entire lifecycle of data within IFMIS Next Gen. The ownership of data will lie with CTA office.
2. Maintain a system of masters for reporting and analytics
3. Capable of resolving multiple instances of the same entity with attribute variations into a single entity using defined resolution rules. The resolution rules can be both probabilistic and deterministic
4. Provide a means to perform deduplication of duplicate records by identifying key attributes and shall provide means to identify entities uniquely
5. Data governance model should be adaptable for managing the quality, consistency, reliability, usability, security, data integrity and availability of the solution.

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4.8.6 Data Governance

1. In the proposed System, data integration must be done from an array of source systems and on top of that, the data sources may often change with regard to the structure of the tables. Additionally, new sources will keep on getting integrated. Hence there is a strong requirement of a Data Governance model comprising of maintaining a comprehensive Data Dictionary, Master Data Management
2. SI will be required to maintain a solution layer for end-to-end Data Management and Governance including Data Quality Management, Master data Management, Data Ownership etc. This layer will enable to perform data processing tasks such as data validation, data transformation, data standardization and data enrichment, data Quality etc. on incoming, stored, and processed data.
3. This layer will create the foundation for IFMIS Next Gen to get insight into data, identify and detect non-validated data, Standardize, and help in de-duplication of data to obtain single source of truth.

4.9 Security Layer

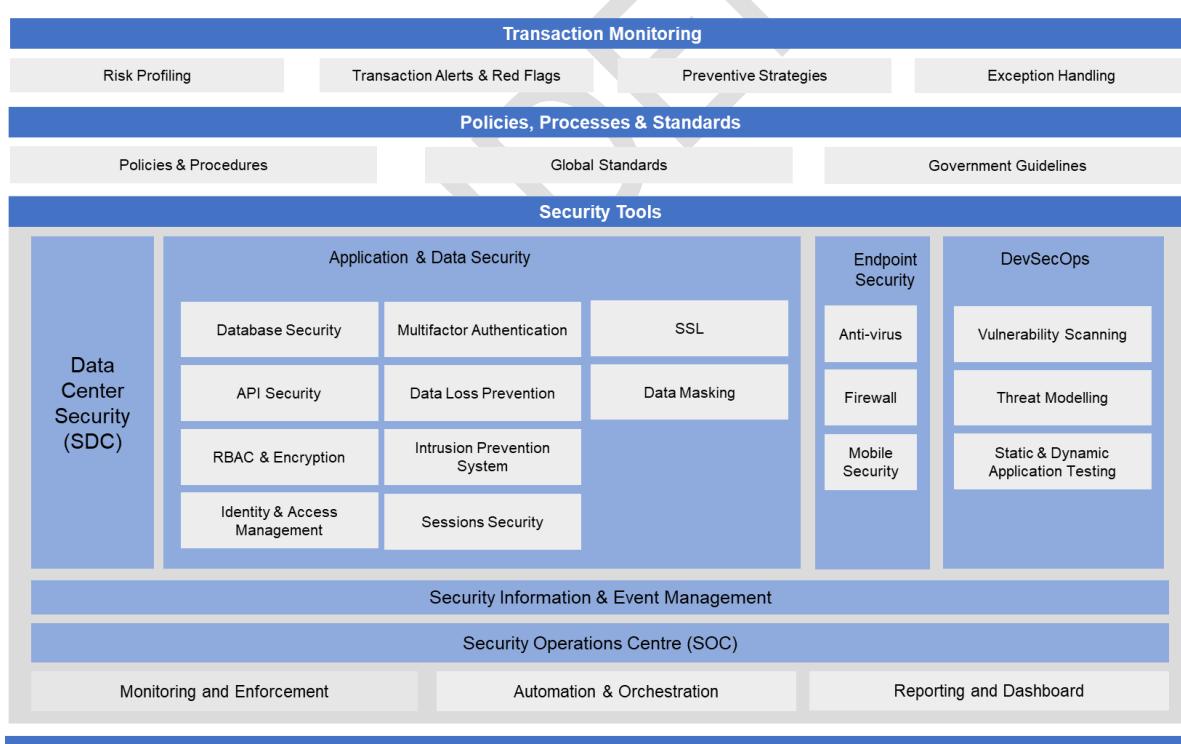


Figure 34: Security, Controls and Governance Framework for IFMIS Next Gen (Illustrative)

The security requirements of IFMIS Next Gen should be designed with the objective to ensure secure access to the system functionalities by authorized users without having to compromise on the end user experience. The Security, Controls and Governance Framework for IFMIS Next Gen consists of the following components as depicted in the figure above –

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- Security Tools to be deployed as part of IFMIS Next Gen
- Policies and Processes like access control, password management
- Controls like Transaction monitoring, risk based monitoring etc.
- Review, Governance and Escalation Mechanism for continuous review and enhancement of security and governance framework for IFMIS Next Gen

Security Tools

The envisaged system should implement various measures to achieve highest standard of security including mechanisms to ensure security of data, spanning from strong end-to-end encryption of sensitive data, patch management and malware security (anti-virus), intrusion prevention, data leakage prevention, access control, network security, stringent audit mechanism, 24x7 monitoring, and measures such as data partitioning and data encryption. Activities such as anti-spoofing (no one should be able to masquerade for inappropriate access), anti-sniffing (no one should be able get data and interpret it), anti-tampering (no one should be able to put/change data which was not meant to be put/changed) will be taken care for data in transit, as well as data at rest, from internal and external threats.

The solution shall support advanced user authentication mechanisms including digital certificates and multi-factor authentication. The system shall maintain audit trails for all the activities performed by all users in the system for user administration, database management, business rule changes, and changes based on system upgrades etc. Such audit trails, at a minimum, shall capture the details of name of the user, changes made, date of changes, name of approver (if applicable) etc. The envisaged system should ensure that the audit trail is tamper proof.

Additionally, DevSecOps tools shall be deployed to build security into the agile software development process. DevSecOps tools will allow conducting security testing of the releases to detect and fix any security vulnerabilities before deployment into the production environment. Following tests will be conducted using DevSecOps tools –

- Vulnerability Scanning of Components to allow identification of any security risks during the initial stages of development.
- Static Application Security Testing for scanning of lines of codes to identify any vulnerabilities
- Dynamic Application Security Testing, a form of black box testing for testing the application for any vulnerabilities without accessing the code
- Threat Modelling tools to analysis various threat scenarios and their probable impact to devise the mitigation strategy

Policies & Processes

The system should be designed and implemented based on latest frameworks of ISO 27001 standards. The security layer would be designed with emphasis on: Authentication, Authorization / Access Management, Role Based Access Control (RBAC), Encryption, Session Management, Vulnerability Assessment, Intrusion Detection & Prevention etc. along with policies, procedures for ensuring secure transactions, access and storage of data. At an

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indicative level, following policies and Processes will be devised, implemented and reviewed from time to time for IFMIS Next Gen -

- Access Control Policies for defining the user roles, privilege users and access rights
- Data retention policy
- Password management for guidelines related to password length, structure, expiry timelines, change and reset
- Phishing and Spam protection Policies to identify and educate end users about spams and phishing instances
- Firewall policy to restrict access to specific websites and applications on officials systems
- Training Policies for implementing state wide security awareness initiatives and ensuring that the end users have a good understanding of security policies, procedure and best practices

Transaction Monitoring

Transaction Monitoring rules and controls should be implemented in IFMIS Next Gen for monitoring of financial transactions undertaken in the system. Such rules should include checks such as potential duplicate payments, sudden spike in high value transactions, payments to a high risk vendors etc. Standard processes will be defined for identification of suspicious transactions for further review and action, managing user roles and workflows for sending transaction alerts. This intervention will provide guidance to Finance Department on preventive strategies to be adopted for frequent red flags. SI must identify possible fraud / improper transaction patters continuously and enhance the transaction monitoring module throughout the duration of the project to include additional scenarios for transaction monitoring, at no additional cost to CTA.

Governance and Escalation Framework

The Technical Committee for IFMIS Next Gen will oversee and review the security provisions of the system, closure of audit findings and provide suggestions for enhancing the security architecture. The system will be security audited once every six (6) months by a CERT-IN empanelled agency post go-live. Apart from this, the system will be audited for ISO 27001 (latest applicable version) compliance followed by the certification from a notified agency.

A designated official from CTA office and assisted by the Security Lead from the SI team will be responsible for overseeing the security protocols and provisions of IFMIS Next Gen. The said CTA official shall have complete visibility of security policies, processes and protocols and any incidents or events. SI's Security lead shall support CTA with the following –

- To inform and advise end users about their obligations to comply with the security policies and protocols.
- To provide inputs for drafting of security policies and related documentation. The SI shall review the existing security policies/ rules/ guidelines and formulate the security policy for IFMIS Next Gen in consultation with CTA.

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- Educating the department and employees on important compliance requirements.
- Conducting reviews to ensure compliance and address potential security issues proactively.
- Review and approve the prioritization plan for implementation of security initiatives.

The SI shall identify scenarios of possible data breach or security issues and implement preventive strategies for the same in consultation with CTA. The SI should make sure that no developers/developing team shall have access to production systems. No single DBA should be able to unilaterally make updates to tables/ structures/rules/policies, such changes should require system approvals from multiple people to avoid dependence on any individual carrying out the change.

The SI should prepare and maintain the information asset register (IAR) for all the assets deployed including hardware and software assets. The IAR will capture criticality, rating, classification, owner, custodian of the IAR. The IAR shall also capture serial number, model, make, location, and other details to track the assets. The systems, sub systems, databases, and applications in IFMIS Next Gen should have the functionality to record all the administrator and user level activities including the failed attempts. All types of logging (audit, session, transaction, error logs, diagnostic logging) shall be enabled for systems/sub systems/databases/applications. Ownership and access to log server shall be exclusive from the system owners and should be clearly demonstrated by SI in the Segregation of Duties (SoD) matrix.

The Security layer of IFMIS Next Gen should provide secure identification, authentication, authorization and access Control for all the users of the portal. Every user will access the IFMIS Next-Gen portal Solution passing through the security layer's protocols. The information security system must be designed and implemented based on latest frameworks of ISO/IEC 27001 standards. The security layer would be designed with emphasis on: Authentication, Authorization / Access Management, Role Based Access Control (RBAC), Encryption, Session Management, Vulnerability Assessment, Intrusion Detection & Prevention etc. The following key requirements should be incorporated into security layer design:

4.9.1 Identity and Access Management

1. It will provide a secure, automated and policy-based user management solution that helps address identity management issues across all environments. Intuitive web administrative and self-service interfaces integrated with existing business processes will help simplify and automate managing and provisioning of users. It incorporates a workflow engine and leverages identity data for activities such as audit and reporting.
2. All the databases must be enabled with the Identity Access Management feature for centralised control. This should also enable disabling of user accounts when a person exits.

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3. The envisaged system should also allow for Privileged Identity Management PIM-PAM for all underlying components and systems. This solution helps in controlling and monitoring the activity of privileged users, secure remote access using encrypted in lieu of passwords, analyse unusual, privileged activity.
4. The SI should configure technical & functional super users designated by CTA for IFMIS Next Gen.
7. The functionality/service would be accessible to for designated nodal officers/admin officials of Departments
8. Envisaged IFMIS Next-Gen would be designed with provisions available for designated nodal officers/admin officials to assign access right privileges to various officials involved in reviewing and approval processes in IFMIS Next-Gen system
9. The system, would provide a GUI-based mechanism to assign various access rights to functionalities and control, to users
10. The functionality/service would be accessible to for designated nodal officers/admin officials of Departments
11. The SI should also maintain an access matrix for data. This matrix should be generated through the system.

4.9.2 Application Data Protection or Encryption Software

1. The system shall ensure that all the interfaces between various applications and users are encrypted using appropriate protocols (such as HTTPS, IPsec etc.), algorithm and key pairs
2. Database server should support most granular column encryption to encrypt sensitive data.
3. The application should store username and password in encrypted form
4. The application shall support SSL encryption mechanism for transferring data across network.
5. The security layer for IFMIS Next-Gen shall have provisions for identity federation management of its internal users. Authorization should be done securely and by using SAML, OAuth and Open ID.
12. Data at rest in various data stores should be protected by strong encryption techniques such as AES 256 or 3DES in both transactional and warehouse data stores. The security for the transactional data stores should be ensured by vertical partitioning of the data in different shards to maintains its security and sanity

Database Security Solution

1. The solution should be able to protect the database from all threat vectors to meet regulatory compliance requirements. It should be able to provide visibility into all database activity, including from across the network, from local users logged into the server itself, and even from inside the database itself via stored procedures or triggers.
2. The solution should be able to discover all the supported databases in the environment and also have the ability to identify sensitive information contained in them
3. The solution should have the ability to monitor database activities from users connecting through encrypted connections.
4. The solution should support applications which have pooled connections. The original IP address and user name should be monitored.
5. The solution must be able to create an application or database baseline from monitored traffic in order to identify anomalous traffic.

4.9.3 Session Management

The system must have provision to manage user sessions appropriately and ensure prevention against session attacks such as (not limited to these) hijacking, replay, fixation, etc.

4.9.4 Security Testing Tool

Bidders to note that the specifications provided in the RFP are minimum specifications. Bidders are expected to study the requirements in detail and provision the requisite tools to comply with industry standards. Any other solution component(s) not provided in the RFP, but which may be required for the solution to work have to be provided by the bidders as part of their technical and commercial proposal, to ensure that the solution meets its desired objectives at no additional cost to CTA.

1. The solution shall include vulnerability assessment toolkit for identification of vulnerabilities in the IFMIS Next Gen.
2. Internal vulnerability assessment toolkit shall also enable pro-active fixing of identified vulnerabilities, with provision for conducting periodical assessment.
3. The solution to allow detection of intrusions such as denial of service attacks
4. The solution should probe for open ports or other externally visible points of attack
5. The SI should provision tool(s) to scan and identify vulnerabilities in source code,

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6. Support multiple languages such as ASP.NET, C# (.NET), C/C++, Classic, ASP (with VBScript), HTML, Java (including Android), JavaScript/AJAX, JSP, PHP, PL/SQL, Python, XML, etc.
7. The solution should support testing of APIs.
8. The solution should have a set of secure coding rules like OWASP Top 10 for web, OWASP Top 10 for Mobile, etc.
9. The solution allows for detailed reporting of vulnerabilities found
10. Solution should be able to integrate with common code repositories including the one proposed by the Bidder
11. The solution should have the capability to schedule scanning activity
12. Solution should have a dashboard for a project with all application vulnerabilities
13. Tool shall identify vulnerabilities such as SQL Injection Vulnerabilities, XSS Vulnerabilities, URL Access Vulnerabilities, redirects etc.

4.9.5 Intrusion Detection and Prevention Systems

1. System must be designed with provision to detect and prevent cyber security attacks.
2. The IPS should protect against common classes of attacks, including but not limited to port scans, buffer overflows, Trojan horses, malformed packets, malicious HTML requests, and e-mail worms.
3. The envisaged solution should meet the perimeter security requirements. This includes but is not limited to network intrusion prevention system, Anti-APT, and external Firewall for Traffic and URL filtering etc.

4.9.6 Web Application Firewall

1. IFMIS Next Gen security solution should include a Web Application Firewall, to protect the application from a variety of application layer attacks such as cross-site scripting (XSS), SQL injection, and cookie poisoning, among others
4. This shall also help sanitization of inputs from end users accessing application over web/mobile.
5. Proposed solution should support for High Availability (Active-Active and Active-Passive) or Cluster. The proposed solution should be able to maintain the capacity required even if one of the HA or clustered device is down.

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6. Proposed solution should protect against known as well unknown threats including but not limited to OWASP top 10 - SQL injection, cross-site scripting, session hijacking, parameter or URL tampering and buffer overflows etc.
7. Proposed solution should be capable of detecting unusual or unexpected patterns in the web traffic.
8. The solution must identify and block configurable search strings like– porn, adult, hacking, download, shareware, etc.
9. The SI should integrate logs from web application firewall, Anti-APT solution with SIEM solution for analysis and reporting.
10. The web application firewall should be able to correlate multiple security events together to accurately distinguish between good and bad traffic and support custom security rules.
11. The web application firewall services should be capable of identifying traffic originating from bots and known malicious sources to stop automated attacks.
12. The web application firewall should be capable of detecting web based malwares and protect the web application against DoS attacks

4.9.7 SIEM

A security incident and event monitoring tool shall be implemented for IFMIS Next-Gen ecosystem, to capture logs, events, incidents from all integrated system/modules within the IFMIS Next-Gen infrastructure. SI may be required to integrate with SDC's SIEM tool. This integration will be required to send application security alerts to SDC and also capture IT infrastructure related alerts from SDC's SIEM tool. The proposed SIEM tool should meet the following minimum requirements -

2. The SIEM solution should be able to collect logs from security and network devices, servers and application security logs.
3. The proposed solution must have an automated backup/recovery process. In the proposed solution, all logs should be Authenticated (time-stamped across multiple time zones) encrypted and compressed before transmission. Logs storage should be available online for 12 months following which logs should be archived in offline storage perpetually. SI will be responsible for carrying out these activities. Storage required for the same will be provided by CTA.
4. The proposed solution should provide time based, criticality-based store and forward feature at each log collection point
5. The proposed solution should have the ability to gather information on real time threats and zero day attacks issued by anti-virus vendors or audit logs and add this information as intelligence feed in to the SIEM solution via patches or live feeds

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6. The proposed solution should generate the following reports (but not restricted to): User activity reports, Configuration change reports, Incident tracking report, Attack source reports etc. In addition, the proposed solution should have a reporting writing tool for development of any ad-hoc reports.
7. The proposed solution should provide the ability to monitor and alert on non-compliance events in real-time and provide necessary reports and dashboards. Dashboard should support reporting for consolidated relevant compliance across all major standards and regulatory requirements.
8. The proposed solution should have a mechanism to track security incidents across a wide range of relevant attributes (i.e. IP addresses, usernames, MAC address, log source, correlation rules, user defined, etc.).
9. The proposed solution should be possible to define purging and retention rules for log storage.
10. The proposed solution should support creation of automated incident management workflows to track incident from creation to closure, provide reports on pending incidents.
11. The SI shall estimate the EPS based on the requirements for IFMIS Next Gen.

4.9.8 Data Loss Prevention

1. The solution deployed for DLP should have the ability to identify –
 - a. Data-in-motion
 - b. Data-in-use
 - c. Data at rest
2. The solution should be able to detect and block keyword patterns.
3. The solution should provide encryption for data protection for endpoints as well as for removable storages and files.
4. The solution should be capable to capture all data leaving through the network and should be port agnostic. It should not ignore any unidentified protocols and capture all traffic.
5. The solution should have the complete control on endpoint, network as well as on storage for critical data leaving the network.

4.9.9 Advanced Anti-APT

1. The solution should provide a high-performance architecture with comprehensive layered protection against Botnet and Command and Control (CnC) related traffic.
2. The solution should support multiple simultaneous VM images and may have capabilities such as sandboxing, behaviour based analysis and protection against CPU kernel level

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exploits identifying Botnet, Command and Control (CnC) Communication and zero day attacks.

3. The solution should be able to schedule reports and also provide the flexibility to generate on-demand reports like daily/weekly/monthly/ yearly/specific range (day and time) etc.
4. The solution should provide capability to identify new APT families and threat sources through global feeds and available knowledge sources.
5. The solution should discover the malfunctioning code irrespective of compressed or any file format.
6. The Solution should include in-built / external sandboxed environment to simulate execution for heuristic analysis; and detect zero-day malware in the form of executable files, PDF files, flash files, RTF files and and/or other document objects.
7. The solution should be enterprise wide scalable and with the ability to handle the high traffic environment.
8. For the purpose of malware identification/zero day protection the solution should have the capabilities to support the File/Media types like PDF, ZIP, 7Z, RAR, CAB, EXE, DLL, SCR, OCX, Java, Flash, MS office files. Also, solution should have the following capabilities including sandboxing, behaviour based analysis and protection against CPU kernel level exploits for threat protection.
9. The Solution may support the following advanced malware analysis methods in addition to Sandboxing–
 - Static code analysis
 - Dynamic code analysis
 - Anti VM detection techniques
10. The solution should support selective analysis of files which are deemed suspicious based on internal capability.
11. Solution should have ability to capture all traffic including encrypted on perimeter, inspect and analyse all protocols, analyse all the suspicious files (pdf, doc, xls, xlsx, jpg, jpeg etc.) for embedded code and binary codes.
12. The solution should have the ability to unpack the code and remove any obfuscation to identify the original executable code.
13. The solution should have capability to identify the payload information of APT including the origination and code information.

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14. The solution should provide detection, analysis and repair capability against APT and SSL based APT-based attacks. The solution should be able to intercept SSL traffic and capable to intercept major PKI encryption algorithms
15. Solution should be capable of integration with SIEM for logging, reporting, and correlation.
16. Proposed solution should have inline blocking mode capability to support real time analysis

4.9.10 End Point Protection

1. All end-point devices should have antivirus agent(s) to deliver the desired service levels as mentioned in the RFP. All files uploaded through either of the devices should be scanned for threats at the time of upload.
2. Antivirus solution must provide automated and centralised download from the Internet to single management console. The distribution of antivirus signatures should happen seamlessly from a single management console to all systems.
3. Must protect against all kinds of viruses including but not limited to Trojan horses and worms including boot sector, master boot sector, memory resident, file multipartite, macro etc.
4. Must support exclusion list by file extensions
5. Must have quarantine capabilities so as to quarantine a system that has been infected
6. Must have heuristic scanning to allow rule based detection of unknown viruses.
7. It should give a pop - up alert box to the user to disinfect, delete, quarantine or block access to that file whenever an infection is found in it (user defined)
8. The solution must have lock down facility so that user cannot change the real time settings
9. The solution must have real time scanning, local scanning and Scheduled scanning
10. The solution must provide the logs for real time scanning, local scanning, shell scanning, general events like signature updates and must be integrate with proposed SIEM

4.9.11 Secure Web Gateway

1. Secure Web gateway solutions should protect Web-surfing PCs from infection.
2. The solution should filter unwanted software/malware from user-initiated Web/Internet traffic and enforce policy compliance.
3. These gateways must, at a minimum, include URL filtering, malicious-code detection and filtering, and application controls for popular Web-based applications.

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4. Native or integrated data leak prevention is may also be included.

4.9.12 SSL

1. The system should support HTTPS protocol on Secure Socket Layer (SSL) for transferring data across network.
2. The system should provision for secured communication between the user and the portal with SSL and encrypted logon information using algorithms with strong key lengths
3. For SSL-enabled web applications, the certificates and private/public key pairs for the web servers being protected need to be up loadable to the web application firewall.
4. Proposed solution should have SSL offloading capability with minimum latency of SSL traffic
5. Expenses on procurement of Secure Socket Layer (SSL) certificate will be borne by CTA.

4.9.13 Endpoint Detection and Response Solution (EDR)

1. The SI sha provision an EDR solution to capture system behaviours at endpoint. The solution shall leverage leading data analytics techniques to flag suspicious activities and system behaviour, block such activities, provide context and suggest remediation measures.
2. The solution should be capable of generating AI driven automated response.
3. The solution should come up with Centralized console and able to detect complex anomalies.
4. The solution should have ransom-ware protection
5. The solution should permit real time and scheduled scanning
6. Product should have the automated remediation feature (One click – Clean-up, One click role back, auto containment etc.).
7. The solution should be capable of ITSM tool integration
8. The solution should have Antimalware, highly accurate Machine learning, behaviour monitoring capabilities
9. Solution must have Vulnerability Protection/Detection feature
10. Solution must have an Application Control module
11. Solution must support Device control
12. Solution must provide context-aware endpoint investigation and response (EDR)

4.9.14 Other Requirements

Apart from the above, the following provisions should be enabled in IFMIS Next-Gen –

1. Release management including preparation of release calendar and release signs off workflows
2. Consolidated dashboards for feeds to be consolidated from individual monitoring solutions
3. Event correlation capability for early detection and alert mechanism for events
4. Knowledge management for best practices, problem fixes and RCAs, standard run books
5. Database performance monitoring for DB process and services utilisation thresholds tracking alert mechanism with ticket logging and baselining capability
6. The solution should allow masking, anonymization and pseudonymization of data.

4.10 Management Layer

4.10.1 Code Repository

The proposed IFMIS Next-Gen system should have a code repository maintained for Portal, Database Objects, Reports, and any other objects for which versioning need to be maintained for deployments. Preference for the system is to have a layer of Continuous Integration and Deployment, that should seamlessly integrate Dev, UAT, Pre-Prod and Prod Environments. The deployments should take care of any objects that are needed to run for quality checks and user test scenarios before moving to UAT, Pre- Prod and Prod Environment. Suggestion is to have Peer Review, Scripts Review, Test Scripts that need to run for integration with specific automatic user testing, required for continuous integration of code and deployment.

Moreover, the proposed IFMIS Next-Gen system should have a data base backup and data archival policy. The data archived and back up should be encrypted and there should be provision of decrypting the data as agreed with CTA as and when the need arises.

4.10.2 Project Management Tool

A project management suite should be used to manage and operate all stages of the project using a proven methodology and to facilitate agile development. The bidder should provision all the required tools for Project management and Software Lifecycle management including but not limited to Agile Project management, Design management, Requirements management, Development management, Test management, Defect management, Release management, etc. Following tasks will be managed using the tool at an indicative level –

1. Define an organized set of activities for the project.
2. Establish and measure resource assignments and responsibilities

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3. Construct a project plan schedule with milestones.
4. Measure project deadlines, budget figures, and performance objectives
5. Communicate the project plan to stakeholders with meaningful reports.
6. Provide facility for detecting problems and inconsistencies in the plan.
7. The tool should support multiple and parallel implementation approaches such as agile.
8. Submit reports for results accomplished during the period, Cumulative deviations to date from schedule of progress read with the agreed and finalised Project Plan; Corrective actions to be taken to return to planned schedule of progress; Proposed revision to planned schedule provided such revision is necessitated by reasons; Other issues and outstanding problems, and actions proposed to be taken; Progress reports on a fortnightly basis, Project quality assurance reports
9. Such reporting will be through the web portal and on Mobile interface to be developed for this purpose (before final go-live, this can be deployed on cloud and thereafter or earlier, in the IFMIS portal). This provision shall be discussed and finalized with CTA.
10. All project management reporting will be through the tool and the tool shall be integrated with the DevSecOps tools. The access of the same shall be given to CTA or its nominated agencies along with the status reports generated from the tool from time to time.
11. All approvals and signoffs should be online on the portal or through the mobile application. All relevant users should be provided user roles and access accordingly. This proposed solution shall be used, maintained and enhanced as per CTA requirements throughout the project lifecycle for all software, documentation, project, control or change requests
12. Audit trail and searchable history of all artefacts presented and approved should be maintained in a single repository where the administrator password should be in the custody of CTA.
13. All artefacts should be stored in the native application (editable) as well as in printable PDF format.
14. All progress reporting shall be driven through the project management tool and sign offs be obtained through the tool itself. Accounts for identified CTA officials shall be created and role based access provided to them. The list of users and their access rights shall be decided upon consultation with CTA. The tool should also allow collaboration between the users.
15. This system should be used, maintained and enhanced as per CTA requirement throughout the project duration for all software, documentation, project, control or change requests.
16. A document repository should be maintained with proper version control of the documents using the proposed document management solution with appropriate controls for document approvals (online approvals)

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17. The tool should allow configuration and viewing of project dashboards to define whether the project is on track and identify the bottlenecks.
18. The tool shall allow monitoring of the health of the project on real-time basis and generate various kinds of alerts in case of any delays or issues.
19. The tool shall also allow management of change requests.
20. The Product Manager (PM) of the SI will serve as a single-point contact within the institutional framework for the purpose of project monitoring / reporting purposes. The PM will be responsible for day-to-day coordination between CTA / PMU and all implementation teams. PM will be responsible for all the activities within the project scope and will report to CTA and Project Management Unit / Team. They will be directly responsible for providing periodic project status, tasks schedule and Action Taken Reports (ATRs).

4.10.3 Test Management Tool

Bidders to note that the specifications provided in the RFP are minimum specifications. Bidders are expected to study the requirements in detail and provision the requisite tools to comply with industry standards. Any other solution component(s) not provided in the RFP, but which may be required for the solution to work have to be provided by the bidders as part of their technical and commercial proposal, to ensure that the solution meets its desired objectives at no additional cost to CTA.

1. The SI shall provision the required testing tool(s) to automate test cases by providing appropriate input and verifying the output against the requirements. The tool should allow testing of UI, APIs, database calls, security and other areas.
2. The tool should allow for cross browser support. The tool should allow tests to integrate with CI/CD pipelines and execute when triggered.
3. The tool should support agile development cycles.
4. The tool should support different application technologies like Web, mobile and windows-based applications
5. The tool should have different scripting options, record/replay, descriptive programming to create robust scripts and frameworks.
6. The tool should also provide keyword driven testing technology, or similar provisions
7. Should support documentation while creating of automated tests.
8. Should enable validation of applications through a complement of checkpoints like GUI objects, database, XML, XPath, CSS Identifiers and bitmap based.
9. Should provide facility to parameterize tests to generate/assign test case output values

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4.10.4 DevSecOps Tools

The SI shall provision a DevSecOps tools like source code repository for committing code, configuration management, software versioning, automated testing etc. to automate the process of development and deployment of releases for each iteration.

The SI's proposed DevSecOps methodology should help to perform processes such as –

1. Reduced manual hand-offs
2. Provide transparency and consistency of code and artefacts from dev to prod
3. Have monitoring and alerting up and down the stack, which both CTA and the SI can see together
4. Should be able to expose virtual services for parallel development and early functional testing
5. Application source code to be maintained in source control in order to abstract related set of modules or feature to be independently included in another application.
6. To manage the DevSecOps approach, ensuring seamless transitions from development to deployment across various environments and release to production.

4.10.5 SLA Monitoring & Reporting Tool

The monitoring and reporting system should be able to provide automated consolidated service level reports for all the service level metrics including real time status of various service levels achieved. All reports to be available through a centralised web access / dashboard. The implemented solution should encompass all subcomponents/ sub-systems of IFMIS Next-Gen application and provide visibility to all environments. CTA may engage 3rd party auditors for validating the deployment of facilities, especially their capabilities for measuring and reporting service levels

1. The SI shall provide complete access to the Service Level Metrics (SLM) reporting system including the manner in which the configuration of the system has been done, product backlog and system manuals. Full access to generate reports from the systems to CTA officials or its nominees.
2. The tool should generate real time alerts and escalations (through e-mails) for every violation of service level. The tool would also be able to present full electronic audit trails available for both the system and user transactions
3. The SI shall provide detailed service level monitoring methodology document with the terms, definition, inclusions and exclusions and the query for each service level. Prior to acceptance of the methodology, the service level tool shall be run and compared against expected values on the basis of sample or test or production data

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and only after the satisfaction of CTA and its acceptance, the service level methodology would be treated as closed and frozen.

4. The service level methodology of the tool shall be open for review within the 1st year of on-boarding of the SI and again after final go-live (every year in December) to fine-tune the same at the discretion of CTA and the process in paragraph 2 above shall be repeated.
5. The SI shall implement the service level monitoring system prior to final go-live stage of the envisaged system.
6. The tool shall have the capability such that CTA and SI users are able to login and access the tool on a daily basis as well as weekly, monthly and quarterly basis as defined in consultation with CTA.
7. Service level monitoring tool should provide a dashboard which shall provide summary of all the service levels on a real time basis. MSP to ensure that the application performance consistent across all networks - SWAN/ VPNoBB/ SSL-VPN/ Intranet/Internet.
8. The dashboard shall provide an integrated performance view of all the service levels along with various threshold violations for each service level. The dashboard should also present the overall view of IFMIS Next Gen performance and relevant indicators.
9. The dashboard shall provide for smart visualization using graphics to display real time performance of the system on each of the service levels.
10. The dashboard must indicate the baseline, breach, lower and high performance scores against each of the service level metric in a graphical form.
11. It should automatically generate real time alerts and escalations (through e-mails) for every violation of service level and the SI must invoke its procedures thereon. The tool shall be able to present full electronic audit trails available for both the system and user transactions.
12. The tool should have the provision of editing and modifying the parameters (set against service level metrics) and their measurement so that whenever the service level metrics revised/ changed/ modified (by CTA only) the same should be incorporated in the service level monitoring system.
13. The system will calculate the SLAs and allow the authorized CTA users to view the SLA reports for further calculation of penalties.
14. The service level monitoring tool shall be tested, audited and certified for its accuracy, reliability and completeness by CTA or its nominated agency after it is implemented by the SI.

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15. The administrator password for the service level monitoring tool shall be handed over to CTA after its acceptance of the configuration/encoding for service level measurement as per the approved methodology. No change shall be done by SI to the configuration/encoding thereafter unless specifically asked by CTA.
16. The proposed solution should provide end to end monitoring of complete Application including but not limited to the following –
 - Application monitoring
 - End user experience monitoring
 - Database monitoring
 - Storage monitoring
 - SLA Monitoring
 - Application and Web servers
17. Database Activity Monitoring
 - The solution should monitor multiple database servers and multiple versions of each server according to the database proposed. All network based database activities should be monitored.
 - The solution should keep all the audit trail tamperproof and be managed centrally.
 - The solution should provide automated discovery of both new and existing Database tables.
 - The solution should have pre-defined reports covering compliance, non-technical, incident and general technical reports.
 - The solution should capture Select, update, insert, and delete activity by user/role.
 - The solution should provide SQL response time for monitoring custom queries.

4.10.6 Application Performance Monitoring

IFMIS Next-Gen envisages high volumetric transactions in the near future and expects its IT infrastructure and all systems, applications, servers etc. to be error free and in operational stage. The tool shall monitor and provide reports and alerts for assessing the system health, setting up and monitoring of service level metrics

1. Ability to track the time spent by any end-to-end transaction at each logical hop
2. Ability to raise alerts based on the thresholds defined for deviations from standard elapsed time

4.10.7 IT Service Management

1. The proposed solution should provide the following –
 - a. Incident management
 - b. Incident logging and assignment
 - c. Automated incident lifecycle management
 - d. RCA for major incidents
 - e. MIS for incidents logged and time to resolve
 - f. Problem lifecycle management
 - g. Knowledge management of RCAs
 - h. Problem correlation capability
 - i. Change management
 - j. Logging ticket for all App, Infra, and Security changes
 - k. Sub tasks management for the all the involved teams
 - l. Approval mechanism for designated changes
 - m. Alignment with release management
2. The proposed solution must provide flexibility of logging, viewing, updating and closing incident manually via web interface.
3. The proposed solution must provide seamless integration to log incident automatically via system.
4. The proposed solution must provide classification to differentiate the incident via multiple levels/tiers of categorisation, priority levels, severity levels and impact levels.
5. The proposed solution must be able to provide flexibility of incident assignment based on the workload, category, location etc.
6. Each escalation policy must allow easy definition on multiple escalation levels and notification to different personnel via window GUI/console.
7. The proposed solution must provide web-based knowledge database to store useful history incident resolution.
8. The proposed solution must have a strong reporting module built in it which can integrate with the proposed BI tool in the overall solution stack. The proposed helpdesk solution must have a top management dashboard for viewing the helpdesk KPI in graph and chart formats.

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9. The proposed solution must be able to log and escalate user interactions and requests.
10. The proposed solution must have an updateable knowledge base for technical analysis and further help end-users to search solutions for previously solved issues.
11. The proposed solution must provide status of registered calls to end-users over email and through web.
12. The proposed solution must have the ability to track work history of calls to facilitate troubleshooting.
13. The proposed solution must support tracking of service level metrics for call requests within the help desk through service types. The proposed solution shall be integrated with the service level monitoring tool to enable centralised service level monitoring.
14. The proposed solution must be capable of assigning call requests to technical staff manually as well as automatically based on predefined rules, and should support notification and escalation over email, web, text messages or any other channel as deemed fit by CTA.
15. The proposed solution must support remote management for end-user and allow users to do screen sharing with user consent, for any system located anywhere, just connected to internet.
16. The tool should allow measurement of SLAs separately during business and non-business hours.
17. The proposed solution should be integrated with the security tools to provide a unified view of the application.

4.10.8 CMDB

1. The SI should also have a CMDB (Configuration Management Database) to manage and track and audit the configurations of all assets deployed.
2. The CMDB should store detailed information about each asset of CTA, including history, location, owner, function, and relationship to other asset.
3. The CMDB should allow authorized users to track changes, identify potential problems with Configuration Items (CIs).

4.11 Non-Functional Requirements

1. The System should comply with the specifications mentioned in this RFP and with GoI guidelines under “standards of e-governance application/ e-Gov. standards” (available

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at <http://egovstandards.gov.in/>) and any other guidelines issued by GoMP at any time during the course of the project.

2. The solution must comply with MEITY's security guidelines, compliances, regulations, and other guidelines as well as policies. The technical solution must be in conformance with e-Governance Standards of MEITY. The entire solution must be capable of incorporating any changes as a result of changes in the regulations and policies of the government from time to time.
3. The solution will be designed and developed to support a 24/7 production environment and reporting system
4. The solution should be compatible with the latest versions of all browsers like Edge, Chrome, Mozilla etc.
5. The external portal development should adhere to GIGW (Government of India guidelines for website) wherever applicable.
6. IFMIS Next Gen should be interoperable with other web applications and for this the system must be in compliance with W3C and REST based web services standards on web design and application. The solution should be IPV6 compliant.
7. The solution should be provided along with the product manuals, user manuals and functional specifications. User manuals to be both documents and in video form.
8. The solution should maintain a database of frequently asked questions (FAQ).
9. The process for removing unnecessary code from the application after it is released should be documented.
10. Application code should not contain invalid references to network resources (Pathnames, URLs etc.).
11. The system should support integration with SMTP for email integration for sending real time emails linked to business processes
12. The system should support integration with the SMS gateway (Short Messaging Service) to send SMS. The SI shall utilize the existing SMS gateway available with CTA for IFMIS Next Gen. In case of requirement beyond the capacity of the existing SMS gateway, the SI shall provision the same in consultation with CTA. The cost for SMS, WhatsApp charges, bandwidth, DSC and e-sign will be borne by CTA. However SI shall be responsible for provisioning the same as per the requirements, in consultation with CTA. The envisaged system should also support integration with other social media gateways.
13. The system should provide audit trails, auditing of user actions and document history
14. The System will inform the user of errors based on the validations performed

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15. The System will contain a "help" function on each screen as needed to provide users with instructions on how to perform functions, descriptions of data elements and/ or other information
16. The system will provide the ability to publish services and related data to be used by different types and classes of external and internal systems.
17. The system should provide reports to authorized users for end-to-end performance monitoring and control
18. The solution should be designed in a way that it can be migrated to cloud, as and when CTA decides the same.
19. Mandatory opening of attachments in workflow: Multiple transaction workflows in IFMIS will have relevant attachments. The system should perform automated checks to ensure that the attachments are opened by user, and only when the attachments are opened will the system enable the workflow to proceed further. The system should be flexible enough to ensure that such a requirement is implemented only in select workflows, as decided by the Department and not in all workflows.
20. High Risk Transaction Passing: IFMIS users are required to pass/ execute transactions, which will have varying degrees of risk associated with them. IFMIS Next Gen should be able to automatically compute the risk profile of a particular transaction based on backend rules and any other analysis of data. This risk profile calculation will be performed in the backend and will be visible to only select group of users. Operational users will not have visibility of the transaction risk profiles. Depending on the risk profile of the transactions, the system will enable the following actions:
 - a. For normal transactions, the workflow will follow the usual business process
 - b. For transactions with certain risk threshold, the IFMIS will trigger automated OTP to the user performing the transaction for validation.
 - c. For transactions with the highest risk threshold, IFMIS will park the transactions which will then be approved by a centralized authority.
 - d. The rules for Risk Profiles and thresholds will be flexible and configurable and will be determined by the department. The system should enable configuration of such rules through the rule interface defined in section 3.12.7.
21. The envisaged system should generate templated letters for various purposes for the relevant functional modules. The letters should be available for routing to relevant users for download or print etc. The system should allow configuration of templates for various letters which can be selected for generation of custom letters and sending to the corresponding recipient on their emails. Further this functionality should allow defining the subject, select the copy to, bcc and other related fields similar to a standard email functionalities. The workflow for approval of letters, save as draft, approve draft etc. should also be enabled in IFMIS Next Gen. In case letters are issued for requisition

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of any items/ records from the recipient, the system should enable generation of itemized lists with deadlines for submission of the same. The system should allow preview of the letter, which can be sent to the recipient at the click of a button. Such letters should also include various orders issued by the State Departments. The SI shall configure various templates in consultation with CTA.

22. The envisaged system should allow digital signature through DSC and e-sign.

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5 Operational Requirements

5.1 General Requirements

1. The SI shall ensure that the audit trail, version control and searchable history of all project documents presented and approved shall be maintained in a single secure repository where the administrator access shall be in the custody of CTA personnel.
2. The SI shall prepare documents and deliverables including but not restricted to roadmap, backlog refinement- user story, continuous integration and continuous delivery, minimising technical debt, test cases and results, user manuals, operational manual, maintenance manuals etc. as per acceptable standards. The list of all deliverables required is given in section 6.
3. All artefacts should be stored in editable as well as print ready formats with review history. A document management tool shall be leveraged for the same.
4. The SI shall maintain log of the internal review of all the deliverables submitted to CTA for review. The logs shall be available to CTA on request.
5. All reporting shall be driven through the project management tool and sign offs be obtained through the tool itself. Accounts for identified CTA personnel shall be created and role-based access provided to them. The list of users and their access rights shall be decided upon consultation with CTA. The SI shall follow best practices in line with global standards, in project management for IFMIS Next Gen.
6. The SI shall generate periodic progress reports and share the same with the steering committee.
7. The SI is expected to lay down a robust Quality Assurance (QA) program for testing of the developed application for its functionalities, performance and security before deploying in the production environment. The program must include an overall plan for testing and acceptance of system, in which specific methods and steps should be clearly indicated and approved by CTA. The SI shall share the QA management plan with CTA enlisting the details given in this section. The SI is required to incorporate all suggestions / feedback provided after the elaborate testing of IFMIS Next Gen, within a pre-defined, mutually agreed timeline.
8. For any other deliverable related to scope of work, SI to agree on a timeline in consultation with CTA and ensure submission according to the same.

5.2 Manpower Requirements

1. SI has to propose named resources for all the key roles as mentioned in the technical evaluation criteria given in Volume II. The SI will be required to keep a record of

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attendance of key core resources and submit the same to CTA from time to time. Parallelly, CTA shall also take the attendance of Key Core resources and Key non-core resources (during their deployment at DTA office) in an online attendance application.

2. SI shall assess the requirement of resources to design and implement the solution including number, skill sets and duration and provision the same for implementation of this project.
3. SI has to necessarily maintain a team of requisite size of skilled professionals as per the requirements of the project.
4. The SI is required to station all Key (Core and Non -Core) resources in Bhopal during Track I & Track II phase of the project. The Key-Core resources are required to be deployed at project site (Bhopal) during the Track I and Track II phase of the project. The Key-Non Core resources are required to be deployed at project site (Bhopal) during the Track I and Track II phase of the project, based on the actual requirement and mutual consent as the total period of deployment is clearly mentioned in the RFP Volume II. The details of the Key Resources (Core & Non Core) are given in the manpower requirement. and operate the project from CTA office. The basic utilities like seating space, basic furniture, electricity, water, etc, shall be provided by the CTA. SI shall provide for laptops, desktops and any other equipment for its resources as may be required for delivering the scope of work.
5. SI to note the following points with respect to replacement of resources –

- a. Replacement request of Key Resources should be in the form of HR undertaking with counter signature of authorized signatory of the SI.
- b. The replacement of Key Core & Non-core Resources during the Track I (Implementation Phase) shall entail penalty as given below:

I. Replacement related penalties under Track I:

Replacement Percentage	Circumstances for allowing Replacements without any penalty	Penalty Amount per Replacement for Reasons other than the Allowed Circumstances (INR)
Up to 25% replacement	In case of Death, Medical Incapacitation or Resignation	3,00,000/-
Replacement > 25% and upto 50%	In case of Death or Medical Incapacitation	4,00,000/-
Replacement > 50%	In case of Death or Medical Incapacitation	6,00,000/-

II. Replacement Gap Penalty:

- i. In case of replacement of Key Resource due to death or medical incapacitation from SI's side or removal of resource by the CTA, the replaced resource should join the project within 45 days from the Date of occurrence of the event.

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- ii. In case of replacement of Key Core Resources apart from Death or Medical Incapacitation, the replaced resource should join the project before leaving of the earlier resource. In case of lack of knowledge transfer (i.e less than 15 days between the outgoing and new resources), CTA shall impose an additional penalty equivalent to 0.006% of TCV.
- iii. If the replaced resource does not join as per the above timelines, CTA shall impose penalty equivalent to 0.012% of TCV for each month of delay, and part thereof.

- c. The replacement of key resources during Track 2 shall entail the penalty shown below:
 - I. Replacement related penalties under Track II:

Circumstances for allowing Replacements	Penalty Amount per Replacement for Reasons other than Allowed Circumstances
In case of Death or Medical Incapacitation	No penalty will be imposed
In case of resignation	INR 2,00,000/-
Replacement for Reasons other than Death or Medical Incapacitation or Resignation	INR 3,00,000/-

II. Replacement Gap Penalty:

- i. In case of replacement of Key resources identified for Track 2 due to death or medical incapacitation from SI's side or removal of resource by the CTA, the replaced resource should join the project within 45 days from the date of occurrence of an event.
 - ii. In case of replacement of Core Key Resources apart from Death or Medical Incapacitation, the replaced resource should join the project before leaving of the earlier resource. CTA shall impose an additional penalty equivalent to 0.006% of TCV, in case of lack of knowledge transfer lack of at least 15 days between the outgoing and new resources
 - iii. If the replaced resource does not join as per the above timelines, CTA shall impose penalty equivalent to 0.012% of TCV for each month of delay, and part thereof.
 - d. These replaced resources shall be interviewed and evaluated by CTA as per the scoring criteria provided in the RFP and the profile of the original resource evaluated for the position, and only then will be allowed to join the project.
 - e. In case of unsatisfactory performance, the Competent Authority may ask for replacement of any resource.
6. SI shall deploy suitable technical resources for IFMIS Next Gen as per activities expected to be carried out, and all the resources should be trained in the use of the deployed tools, technologies and should have requisite functional knowledge.

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7. CTA reserves the right to visit the development center of SI once in a quarter, along with the relevant officials of the SI. This would be carried out by CTA at its own cost. The dates could be finalized in mutual agreement with the SI
8. SI shall ensure that all the resources deployed for IFMIS Next Gen (including its sub-contractors) undergo suitable trainings in relation to security aspects of the project and maintain the confidentiality of data.
9. SI shall ensure requisite support from the OEM for various aspects of project including configuration, customization, sizing, performance tuning and implementation support.
10. In case of replacement of resources, the SI shall intimate CTA well in advance and ensure proper KT and handover period/ overlap of at least 15 days between the outgoing and new resources.
11. In case a key resource will be on leave for 3 days or more, the same should be intimated in advance to CTA office
12. Key core resources shall be interacting with CTA on a day to day basis as they would be onsite and would take calls / communication with CTA and for responding to the queries of CTA, Similarly Key Non Core resources shall also be interacting with CTA officials whether they are off site or onsite, Furthermore, SI would also ensure timely coordination with other stakeholders for requirement gathering, integrations etc., participate in meetings at Bhopal or other locations / demos / presentations as per the requirement of the project.
13. CTA reserves the right to request for change in key resources, after providing reason for the same to the SI. In such a case, the SI would need to replace the resource within 21 calendar days.

5.3 Sub-Contracting, Consortium & Joint Venture

Note: Bidder to refer to RFP Volume II Section 2.3 for details on sub-contracting, consortium & joint venture.

5.4 OEM Professional Services

The SI shall fulfil the requirement for involving the OEMs of the components deployed (hardware and software) to ensure that installations/ configurations/ integrations of the various components are performed according to the best practices and OEM guidelines and seeking the professional support of the OEMs during any contingency or as per the need identified by SI and CTA at no extra cost.

1. The SI shall ensure requisite support in the form of minimum number of man-hours from the OEM support/ consulting services wing for various aspects of project including configuration, customisation, sizing, performance tuning and implementation support.

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2. The SI shall assess the requirement of professional services from OEMs for all components of the solution (both hardware and software), and provision for requisite support from all OEMs as per the requirements identified.
3. The SI shall provision onsite professional services support including consulting services combined from the proposed all OEMs or their consulting unit for at least 10 person months during implementation phase and at least 1 person month per year during operations and maintenance phase of the project as per the timelines defined in section 6 and prorated for extended period of contract for products so procured by the SI.
4. The breakup of the support for professional services for the duration of the project shall be submitted by the bidder as a part of the technical bid as per the undertaking provided in Volume II of the RFP. The SI shall adhere to the number of person months specified in this break up, however in case of unused or over utilised man days of support for a year, the same will be adjusted against the subsequent year(s) until the total allocated provisioned man days are not utilised.
5. The support services should be made available within twenty-four (24) hours of the requirement being identified. However, in case of high severity services, the support services shall be made available at the earliest as desired by CTA.
6. The SI shall give an un-priced break-up of the professional services support procured and its nature from the OEMs as part of the technical bid.
7. The software licenses mentioned in the bill of materials shall be genuine, perpetual, full use and should provide upgrades, patches, fixes, security patches and updates directly from the OEM. All the licenses and support (updates, patches, bug fixes, etc.) should be in the name of CTA.
8. The SI shall also involve the trainers of OEMs in conducting training of specialised products/modules/tools.
9. The SI shall warrant that the infrastructure procured for project has no defects arising from design or workmanship or any act of omission and must provide a declaration for the same from all the OEM for equipment that would be supplied at the DC site or DR site. The warranty shall remain valid for at least six (6) months beyond the service period of the project for all hardware, software and other components comprising of the solution. The SI shall ensure warranty in case of an extension.

5.5 Compliance to Standards and Certifications

The SI should ensure that the data model, interface designs, and other components are designed/ configured as per industry standards and globally accepted best practices. The SI is expected to align all phases of the engagement and sustenance as per best industry standards as listed in the table below. CTA (or its appointed agency) shall regularly review IFMIS Next Gen adherence to industry standards. The SI should adhere to any of the review points highlighted by CTA (or its appointed agency). The IFMIS Next Gen development and maintenance process/ methodologies shall necessarily follow and align to CMMi Level 3

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standards or above. It is expected that an independent Quality Team of the SI shall independently and regularly audit the applications, data and Information Security, Metadata Standards, Currency of Data Dictionary, Infrastructure, etc. against identified standards, best practices and requirements. The frequency of such audits must be at least once per six months. The result of the audit should be directly shared with CTA along with an effective action plan for mitigations of observations/ non-compliances, if any. It may also be noted that the proposed audit team should be independent of the implementation team. CTA may from time to time engage third party agencies for conducting process audits and code reviews, SI shall ensure preparedness and address the findings within the timelines finalised in consultation with CTA. SI shall also conduct internal code reviews and process audits every 6 months and submit the findings and remediation plans to CTA.

CTA may, at its own discretion, engage independent Third-Party Auditor(s), who will have jurisdictions over the entire scope as has been laid out in the RFP or a part thereof. The SI will have the responsibility of assisting and providing every access and support to the Third-Party Audit teams as per calendar agreed in advance. The result of the audit shall be shared with the SI who has to provide an effective action plan for mitigation of observations/ non-compliances, if any. In addition to above, the proposed solution has to be based on and compliant with industry standards (their latest versions as on date) wherever applicable. This will apply to all the aspects of solution including but not limited to design, development, security, installation, and testing. There are many standards that are indicated throughout this report as well as summarised below. However, the list below is just for reference and is not to be treated as exhaustive.

Solution Element	Standards
Workflow design	WFMC Standards, <u>BPMN</u> (Business Process Model and Notation), <u>CMMN</u> (Case Management Model and Notation), <u>ITIL 4</u> (Information Technology Infrastructure Library) Adopt a hybrid model that integrates BPMN 2.0, DMN, and CMMN for structured, decision-based, and unstructured workflows, combined with RESTful APIs and event-driven designs for real-time integration or other similar standards
Information access / transfer protocols	W3C Specifications
Portal Development	W3C, GIGW
Software Development	CMMI Level 3 or above
Interoperability	Web Services, Open Standards
Document Encryption	PKCS specifications
Information Security	ISO 27001:2022 certification or above, DSCI, RBI Cyber Security Framework (or above) *.

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Solution Element	Standards
	<p>Relevant controls of all 14 domains of ISO 27001 to be adhered to and self-certification on compliance to be provided against each as applicable –</p> <ul style="list-style-type: none"> • Information Security Policies • Organisation of information security • Human resource security • Asset management • Access control • Cryptography • Physical and environmental security • Operations security • Communications security • System acquisition, development and maintenance • Supplier relationships • Information security incident management • Information security aspects of business continuity management • Compliance
Service Management	ISO 20000:2018 specifications (or above)
Project Documentation	IEEE/ISO specifications for documentation
Business Continuity	ISO 22301:2019 (or above)
Web Development Standards	<p>Solution Element: Web Development Standards</p> <p><u>Core Standards</u> <u>HTML 5.3, CSS 3, JavaScript (ES2023)</u></p> <p><u>Accessibility Standards</u> <u>WCAG 2.1/2.2, ARIA 1.2</u></p> <p><u>Security Standards</u> <u>HTTPS (TLS 1.3), CSP (Content Security Policy)</u></p> <p><u>API Standards</u> <u>RESTful API Guidelines, GraphQL, OpenAPI 3.1</u></p> <p><u>Data Interchange Standards</u> <u>JSON Schema, XML 1.1</u></p> <p><u>Document and File Standards</u> <u>PDF/A-4, ODF 1.3, WebAuthn</u></p>

Table 14: Adherence to Standards

Relevant guidelines and standards issued by CERT-IN, MeitY and Government of India should also be adhered to, including the following –

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1. Information Technology Act 2000 (And related addendums or notifications)
2. CERT-In security guidelines for Indian Government websites
3. E-SAFE Guidelines for Information Security
4. e-Governance Standards for Preservation Information Documentation of e-Records
5. Guidelines for Indian Government Websites
6. Relevant data privacy and protection guidelines and laws in India
7. Other relevant policies and guidelines issued by GoI and GoMP from time to time

The SI to ensure that the website is security audited once every six (6) months by a CERT-IN empanelled agency. (CERT-In has been designated under Section 70B of Information Technology (Amendment) Act 2008 to serve as the national agency for collection, analysis, forecast/alert, handling emergency measures for Cyber-crimes) – <http://www.cert-in.org.in/>. The cost of auditing shall be borne by SI. CTA may also engage 3rd party auditors for information security testing and assessment as per RFP requirements. The SI shall also obtain the following certifications for IFMIS Next Gen –

- GIGW certification within 6 month of final go live
- ISO 27001 certification within 6 months of final go-live
- ISO 9001 certification within 6 months of final go-live

The cost of audits mentioned against “a”, “b”, “c”, “d” and “e” in the list below, shall be completely borne by the SI and shall be conducted by external auditors approved by CTA and the costs of audit mentioned at “f” and “g” shall be completely borne by the CTA.

- a. ISO and other certifications given above
- b. Initial pre-go live readiness audit including performance audit, annual performance audit source code review, configuration review of all tools deployed for IFMIS
- c. Annual security audit by SI
- d. 3rd party performance testing
- e. Vulnerability Assessment and Penetration Testing (VAPT)
- f. Quarterly service level audit
- g. Annual security audit by CTA or agency appointed for the same

5.6 Project Management and Governance

5.6.1 Project Governance Committee

Various governance committees have been constituted by Finance Department (FD) /CTA to act as the reviewing and approving authority for project related matters. However, these committees may refer the matter to Subject Matter Experts or Sub-Committee(s) for decision/comments/feedback as deemed necessary. Broadly the following committees are envisaged as part of the project

- Apex Committee
- Coordination Committee
- Technical Committee
- Change Control Board

Figure : High Level Governance Structure

1. The governance committees will consist of stakeholders identified from Finance Department, CTA and any other agency as designated by CTA.
2. The project leads shall participate in the governance committee meetings and update the governance committees on project progress, risk parameters (if any), resource deployment plan and status, immediate tasks, and any obstacles in the project.
3. The governance committees meeting will be a forum for seeking approval for project decisions on major changes, highlight and discuss issues and deviations.
4. During the development and implementation phase of the project, governance committees meetings will be held on a monthly basis or otherwise as agreed upon with CTA.
5. During the operations and maintenance phase, the meetings will be held on a quarterly basis or otherwise as agreed upon with CTA.
6. Other than the planned meetings, in exceptional cases, CTA may call for a governance committee meeting with prior notice to the other party.
7. The SI should finalize the frequency of meetings during the implementation phase in consultation with CTA based on the agile approach. SI to note that monthly meetings will be organized with the senior officials of the SI. SI to ensure participation of the senior officials in these meetings.

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5.6.2 Project Management Unit

A Project Management Unit (PMU) will be set up by CTA to monitor the overall project and PMU shall participate in various governance meetings to present the status of the project.

5.6.3 Change Control Board

Change Control Board (CCB) would be responsible for addressing all issues related to proposed change requests by the project delivery team of SI. The committee would approve / reject (as case may be) all proposed change requests, following an appropriate Change Control Process. CTA will create a committee which will act as a CCB, may also involve PMU as advisors, to oversee the administration of the Change Request Management procedures and guidelines. The CCB will be authorized to review, approve and schedule all changes to the IFMIS application. All decisions of the CCB will be final and binding on all parties involved.

5.6.4 Escalation Procedure

In order formally to submit a Disputed Matter, one Party ("Claimant") shall give a written notice ("Dispute Notice") to the other Party. The Dispute Notice shall be accompanied by (a) a statement by the Claimant describing the Disputed Matter in reasonable detail and (b) documentation, if any, supporting the Claimant's position on the Disputed Matter.

The other Party ("Respondent") shall have the right to respond to the Dispute Notice within 7 days after receipt of the Dispute Notice. In the event that the parties are unable to resolve the Disputed Matter within a further period of 7 days, it shall refer the Disputed Matter to next level of the dispute resolution for action as per the following escalation matrix.

S. No.	Issue Escalation / / Dispute	Level 1	Level 2	Level 3	Level 4
1.	Change Management	Coordination Committee	Competent Authority	Apex Committee	
2.	Technical Issues	Technical Committee	Coordination Committee	Competent Authority	Apex Committee
3.	Non-Technical Issues	Coordination Committee	Competent Authority	Apex Committee	

5.7 Change Management and Control

1. The purpose of the Change Management procedure is to control changes to IFMIS Next Gen.
2. The Change Management procedure has the following objectives –

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- To protect the system from uncontrolled changes
 - To minimize the occurrence of unintended affects during the implementation of necessary changes
 - To avoid implementation of any changes which is not reviewed, approved or analysed
 - To control the impact of changes and minimize the effect on effective as well as efficient service delivery
3. The entire change request process will be implemented as mentioned in Schedule I of Volume III of the RFP.
 4. SI to provide blended person-month rate for catering to change requests in the commercial bid form. The blended person month rate shall remain the same during the entire duration of the Project.
 5. These rates shall be multiplied with the actual efforts of change request (as approved by CTA) to arrive at the payments to be made for change requests in addition to the quarterly payments of O&M efforts during the agreement period.
 6. The effort estimation for the Change Requests (CR) would be mutually agreed between CTA and SI through the change request procedure. However, CTA reserves the right to get the effort estimate validated by an independent agency which will be binding on the SI.
7. The CR in the modules will be taken care of by the SI through the formal change request process.
 8. At an indicative level, the activities are broadly classified as follows:
 - 1) Change Requests
 - Major changes in the requirement from scope of work given in RFP.
 - Requests for enhancements
 - Requests for development of new functionalities / modules
 - Interim or temporary work products created during the course of project shall not be considered under CR
 - Any other related component as per industry practice shall be a part of IFMIS Next Gen related CR.
 - Any other related activity as required by the CTA as part of CR of system.
 - 2) Operations & Maintenance
 - Annual technical support
 - Application functional support
 - Annual Maintenance Contract (AMC)
 - Handholding
 - Software maintenance
 - System administration
 - Operating central helpdesk

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- Facilitate OEM support
 - The O&M shall be provided for all software procured and implemented by the SI. The SI shall render both on-site and off-site maintenance and support services to all the designated locations. The services will cover, all product upgrades, modifications, and enhancements.
 - The SI will implement from time to time the Updates/ Upgrades/ New releases/ New versions/ Patches/ Bug fixes of the software and operating systems as required after necessary approvals about the same.
 - Tuning of application, databases, third party software's and any other components provided as part of the solution, to optimize the performance.
 - Amendments in the applications implemented as part of the project, to meet the requirements
 - The SI shall apply regular patches/ updates/ upgrades to the licensed software including the operating system and databases as released by the OEMs.
 - SI shall formulate a distribution plan prior to rollout and distribute / install the configured and tested software as per the plan.
 - The SI shall provide for software license management and control. SI shall maintain data regarding entitlement for software upgrades, enhancements, refreshes, replacements, and maintenance.
 - SI should perform periodic audits to measure license compliance against the number of valid End User software licenses consistent with the terms and conditions of site license agreements, volume purchase agreements, and other mutually agreed upon licensed software terms and conditions and report to Purchaser on any exceptions to SI terms and conditions, to the extent such exceptions are discovered.
 - The SI shall undertake regular preventive maintenance of the licensed software.
 - SI is required to maintain all the information related to software, hardware, peripherals, servers, etc. related to IFMIS Next Gen on DMS or other similar system.
 - Any other related component as per industry practice shall be a part of IFMIS Next Gen related O&M.
 - Any other related support or activity as required by the CTA as part of operations and maintenance of system.
9. Notwithstanding anything else stated in the RFP, these provisions supersede any other provision given in the RFP.
10. Any configuration, performance tuning, mitigation of security observation during annual/ periodical audits, changes required to accommodate patches, upgrades, bugs fixing, etc. which are required for the operation of the project shall not qualify as change request.
11. The functional requirements given in the RFP are indicative only and not exhaustive in any manner and/or kind and/or form and shall be finalized in consultation with CTA during requirement validation and finalization.
12. COTS products' customization should be kept to a minimum and as far as possible industry best practices should be adhered to. Wherever absolutely required COTS product customization should be done in a manner that it gives a reasonable assurance of upward compatibility with future versions of the platforms and with bespoke development of the IFMIS solution.

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13. All the development / customization/ configuration must meet the requirements for security, performance and ease of use for operations, administration and management.
14. Change requests and CCNs will be reported monthly to CTA to review progress.
15. The acceptance criteria for any such 'Change' will remain the same as described in the RFP with respect to the performance and quality parameters or as mutually agreed between CTA and SI.
16. The SI must take all necessary steps to implement the change as per the project plan submitted without compromising on quality and performance standards. If the SI fails to comply with the acceptable standards & requirements of implementing of the requested change or denies implementation of the requested change at any stage during the contract period, CCB will have complete authority to get the change implemented from any of the third party / nominated government agency independently. In all such cases the entire cost of change implementation will be recovered completely from the SI. Also, CCB reserves the right to impose penalties depending upon the gravity of impact on the Service Delivery due to non-implementation of the requested Change. In all such matters the decision of CCB will be final and binding on all parties.

6 Deliverables and Timelines

1. The SI shall deliver the following deliverables to CTA as part of an assurance to fulfil the obligations under the contract of this RFP. The table given below may not be exhaustive and SI is responsible to provide all those deliverables which may be specified in this RFP but not listed here and those mutually agreed between the SI and CTA as required for the project.
2. The timelines for producing each of these deliverables will be in line with the table below.
3. The SI shall submit a project plan along with work breakdown structure and plan for deliverables to CTA which shall indicate the timelines of submission of these deliverables for the approval of the CTA.
4. The SI to hold walkthrough workshops for CTA after preparing and submission of all the deliverables.
5. Observations, comments, inputs, etc. on the deliverables given by CTA office shall be resolved by the SI and incorporate the same in final submission of any of the deliverables.
6. The timelines given in this section shall be adhered to by SI. In the following table, T would be date of Award of Contract **(signed between CTA & SI)**.
7. Notwithstanding anything to the contrary mentioned in any other section of the RFP, bidder to note that the timelines provided in the table below will prevail.

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#	Stage	Deliverable	Timelines
1.	General	<ul style="list-style-type: none"> • Performance Bank guarantee as specified in Volume II of the RFP • Project status reporting, periodic status reports, minutes of the meetings, etc. 	<ul style="list-style-type: none"> • PBG as per the timelines defined in Volume II • SI should publish progress reports and share with CTA office at a predefined frequency (weekly, monthly, quarterly) during the entire duration of the project
2.	Implementation Planning, Design and Set Up	<ul style="list-style-type: none"> • Project plan (Scope, WBS, Schedule and milestones, Resource plan, Stakeholders, Communication plan, Overall system architecture, Testing & QA, Migration plan, Change management, Escalation procedure, Exit management) <p>Note: All the above stated design documents are required to be updated (relevant portions) on a half yearly basis after its approval from the competent authority.</p>	<ul style="list-style-type: none"> • Draft Project Plan (with kick off meeting) - T+15 days • Final Project Plan - T+45 days
3.		<ul style="list-style-type: none"> • Deployment of Project Management Tool 	<ul style="list-style-type: none"> • <u>T+45 days</u>
4.		<ul style="list-style-type: none"> • Deployment of all key core and non core resources as per RFP requirements 	<ul style="list-style-type: none"> • <u>T+45 days</u>
5.		<ul style="list-style-type: none"> • Project Design Documents: <ul style="list-style-type: none"> o Inception Report (Understanding on Purpose, Scope, Approach, Methodology, Phases, Deliverables, Workplan & 	<ul style="list-style-type: none"> • Submission of Project Design Documents - T+4 months • Finalization of Project Design

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#	Stage	Deliverable	Timelines
		<p>Timelines, RACI Matrix, Backup retention policy)</p> <ul style="list-style-type: none"> o High Level Design (Functional architecture, Technical architecture, BOM, Deployment architecture, Integration architecture, Data replication methodology, Infrastructure requirements, High level DB design, Mobile application architecture) o Data Migration Plan (Scope, Methodology, Data standardization, Parallel run plan, Error correction methodology) o Transition Plan (Scope, Stakeholders, Change management methodology, Pilot planning, Methodology for operations & maintenance) o Information Security Plan (Scope of information security, Security architecture, Security infrastructure, Governance plan) o Business Continuity Plan, Crisis Management Plan & Risk Management Plan (Scope, Stakeholders, Risk assessment, Crisis & Disaster scenarios, Mitigation plan, Response procedure, Recovery plan, Emergency response teams, Communication plan, Training & drills, Post crisis evaluation, Communication with MPSeDC and CERT-In) 	<p>Documents - T+6 months</p> <ul style="list-style-type: none"> • First cut documentation User Stories of all the 18 modules <p>Documents - T+6 months</p>

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#	Stage	Deliverable	Timelines
		<ul style="list-style-type: none"> o Test Plan (Background, Scope, Approach, Entry / Exit criteria, Testing cycles, Stakeholders, Deliverables and schedule, Test environments, Defect management, Communication plan, Acceptance criteria) o Training Plan (Scope, TNA, Infrastructure requirement, Training material development, Operationalization of LMS, Training schedule, Refresher training plan, Training feedback mechanism) <p>Note: All the above stated design documents are required to be updated (relevant portions) on a quarterly basis after its approval from the competent authority.</p> <ul style="list-style-type: none"> • Document Management System • Sanity Testing Report • First cut of documentation of user stories for all 18 modules 	
6.	Deployment and Operationalization of Project Teams / Cell	<ul style="list-style-type: none"> • Deployment and Operationalization of Business Support & Grievance Cell 	T+12 months
7.		<ul style="list-style-type: none"> • Deployment and Operationalization of Rule Management Team 	T+13 months
8.		<ul style="list-style-type: none"> • Deployment and Operationalization of Transaction Monitoring & Analytics Cell 	T+16 months
9.		<ul style="list-style-type: none"> • Deployment and Operationalization of Change Management & Training Cell 	T+12 months

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#	Stage	Deliverable	Timelines
10	Development and Acceptance of modules (Web, Mobile & AI/ML)	<ul style="list-style-type: none"> • Finalization of User Stories as part of Functional Requirements by Considering Business Process Re-engineering, system , Feature List, System backlog, Low level design document along with Entity Relationship Diagram Data Flow Diagram (DFD), Application software release plan and other relevant documents as per the industry standards. • Sprint Backlog, Increment • Wireframes and mock ups • Static code analysis reports • Code coverage reports (unit / integration tests) • API Integration Solution documentation • Test plans (Unit, module, integrated, UAT, Performance, Load, Regression etc) and test cases including test data (unit & UAT) • Release notes • Application Software ((Web, Mobile & Emerging Technology use cases) • User manuals and Frequently Asked Questions (FAQs) • User training plan • Data Migration Reports including – <ul style="list-style-type: none"> ○ Data migration plan, scripts etc. ○ Logs and audit trail for data migration activity • Test cases for verification of data migration activity 	<p>Wave I – T+6 to T+13 months</p> <p>Wave II – T + 17 to T+21 months</p> <p>Data Migration completion reports to be submitted before data migration of the system.</p>
11	Data Migration	<ul style="list-style-type: none"> • Data migration report with each migration 	Wave I - T+2 to T+13 months

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#	Stage	Deliverable	Timelines
			Wave II - T+2 to T+21 months
12	Pilot Run	<ul style="list-style-type: none"> • Pilot run report 	Wave I - T+13 to T+16 months Wave II - T+21 to T+24 months
13	IFMIS Next Gen go-live	<ul style="list-style-type: none"> • Migration of all data from legacy systems (SFMS, CFMS, FMIS & IFMIS 1.0 & physical data registers) • Final testing & certification of IFMIS Next Gen • 3rd Party testing & certification • Security audit • Code review • Performance testing • Peak load and penetration testing reports • Audit and certification reports • GIGW Audit • Updated system design documents • Security policy and Standard Operating Procedures for IFMIS Next Gen • Submission of Source Code • Operation and Maintenance Manuals for Administration and Maintenance of IFMIS Next Gen • Final acceptance by the competent authority as per activities described in Section 2, 	Wave I - T+16 months Wave II - T+24 months

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#	Stage	Deliverable	Timelines
		<p>Deliverables and Timelines given in section 6 and Acceptance Criteria as per section 9</p> <p>Note: It is to be noted that at the time of final go-live of IFMIS Next Gen SI is required to submit all the updated system design documents, specifications, source code, application deployment files, user manuals(Video and documents), administration manuals and all other applicable deliverables</p>	
14	Change Management	<ul style="list-style-type: none"> • Change management • Awareness workshop/training 	<p>Wave I - T+16 months onwards</p> <p>Wave II - T+24 months onwards</p>
15	Track Operations Maintenance	<p>II: &</p> <ul style="list-style-type: none"> • SLM monitoring reports for IFMIS Next Gen. • SLA report should be generated from the SLA tool and will be reviewed for accuracy by CTA • Report on OEM professional services availed • Peak load, performance testing and DR drill reports • DR drill compliance plan report • Incidence Logs and Patch / Upgrade Policy • Preventive Maintenance Report • Restoration/ Failover Reports • In case of Root Cause Analysis (RCA), action plan, action taken report and 	<ul style="list-style-type: none"> • SLA Reports: Within 7 working days of the following month during IFMIS Next Gen O&M • RCA to be submitted within 2 days of concluding the exercise • RCA action plan, action taken report and impact report should be submitted quarterly by SI.

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#	Stage	Deliverable	Timelines
		<p>impact report should be submitted quarterly by SI.</p> <ul style="list-style-type: none"> Monitoring of SDC, MPSeDC related services of DC, DR, NDR & Non Production Environment. SI shall also provide detailed analysis in case the SLA breach is due to DC, DR, NDR & Non Production Environment issues or issues not attributable to the SI. 	<ul style="list-style-type: none"> Exception report on DC, DR, NDR & Non Production Environment for escalation
16	Training and Capacity Building	<ul style="list-style-type: none"> Training Needs Assessment report Training plan and calendar User Training with manuals (Text &Video) Feedback, assessment and outcome report for all trainings 	<p>Wave I - T+16 months onwards</p> <p>Wave II - T+24 months onwards</p> <p>Report to be submitted on last working day of every month</p>
17	Rule Management Team	<ul style="list-style-type: none"> The SI should coordinate with CTA to identify the interdependencies between rules and user stories. The SI shall maintain a repository of the same and update periodically. 	<p>Wave I - T+16 months onwards</p> <p>Wave II - T+24 months onwards</p> <p>Report to be submitted on last working day of every quarter</p>
18	Transaction Monitoring and Analytics Cell	<ul style="list-style-type: none"> Details of transaction monitoring rules/workflow devised, approved and configured in IFMIS Next Gen. Details of analytical models, red flag indicators and reports curated by the cell. The SI should, from time to time, as per the requirements submit a report on the 	<p>Wave I - T+16 months onwards</p> <p>Wave II - T+24 months onwards</p> <p>Last working day of every 3 months post go-live of IFMIS Next Gen</p>

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#	Stage	Deliverable	Timelines
		analytical interventions proposed, indicative KPIs etc, to CTA office.	The fraudulent transactions to be informed immediately to the concerned CTA officials
19	Business Support & Grievance Cell	<ul style="list-style-type: none"> Call Log and Resolution Reports for Helpdesk including analysis of frequently raised issues 	Last working day of every month post operationalization of BSG at T+12 months onwards
20	Exit Management	<ul style="list-style-type: none"> Submission of exit management plan IPR Documents or licensing compliance checklist 	End of each year and one (1) year before the contract expiration
21		<ul style="list-style-type: none"> Documentation of Risks of Transition Stage and Mitigation Measures 	T+78 months
22		<ul style="list-style-type: none"> Documentation of open issues 	T+84 months
23		<ul style="list-style-type: none"> Other exit management deliverables as per various provisions given in RFP 	T+78 to T+84 months
24	Others	<ul style="list-style-type: none"> SI should create a list of peak period activities in consultation with CTA and ensure completion of the same as per stipulated timelines. The system should, however, be designed to meet peak period requirements. Compliance to Standards and Government guidelines 	<ul style="list-style-type: none"> Timelines for peak period activities to be decided in consultation with CTA SI should submit a self-certification for compliance to standards every quarter (or

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#	Stage	Deliverable	Timelines
			otherwise as agreed with CTA) for compliance to various standards and certification mentioned in section 5.5.

Apart from the aforementioned deliverables, the SI shall also submit the following at the end of each quarter after Final go-live or otherwise as defined by CTA –

- Updated system design documents, specifications,
- Latest source code, application deployment files, configuration files for entire solution.
- Updated user manuals, administration manuals, training manuals etc.
- Software change logs etc.
- SI will provide access to source code of IFMIS Next Gen across all environments to CTA or its nominated agencies.
- Any other requirements related to the scope of work should be implemented by the SI within the stipulated timelines at no extra cost to CTA.

7 Payment Schedule and Penalties

7.1 Payment Schedule

1. The IFMIS Next Gen project is planned to be implemented as a service complete with all the components and infrastructure required for delivery of the envisaged activities as described in this volume of the RFP.
2. The payments to the SI and their schedule shall be as per the terms defined in this section of the RFP. The SI shall be paid on a model as described in this section.
3. Operations and Maintenance charges will be paid out for IFMIS Next Gen with no extra payment in case of delay in achieving milestones.
4. The SI shall quote a Total Contract Value (TCV) in the commercial bid submitted by the SI.

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5. The entire cost to design, develop, implement, operate and maintain IFMIS Next Gen and all required systems and functionalities would be borne by the SI and factored in the single value i.e. Total Contract Value (TCV) to be quoted by the bidder in the commercial bid. This quote should cover all costs anticipated by it, on the basis of the requirements listed in all the volumes of this RFP. The SI shall include all costs in the TCV. No separate payments will be made to the SI for licenses.
6. GST shall be paid (as per applicable rate) to the SI on its invoices and all other taxes are to be borne by the SI. All payments agreed to be made by CTA to the SI in accordance with the bid shall be inclusive of all statutory levies, duties, taxes and other charges whenever levied/applicable except GST.
7. The payment with respect to individual module shall be made milestone wise. The criteria for achieving payment milestone shall be as per Activities described in Section 2 and other sections of RFP, Deliverables and Timelines given in Section 6 and Acceptance Criteria as per Section 9.
8. Payments with respect to operations and maintenance shall be made based on the modules made live by the SI and the value of payment shall be based on the weightages of the individual module given in the following table.
9. A service level audit may be performed at the end of every quarter during the operations and maintenance phase and penalties/incentives shall be calculated accordingly. However, SI is required to submit SLA reports every month.
10. At the time of project initiation, CTA, may procure one or more components from SDC based on the solution proposed by the SI. In such a case, the cost for the same (as specified in the commercial bid of the SI) will not be paid to the SI.

Note: CTA has the right to make part payments against any modules at their sole discretion, depending on the work done by the SI.

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#	Track	Stage	Pre-Requisites for Payment	Unit Cost	Number of units	Value as % of TCV	Timelines
1	1	Implementation Planning, Design and Set Up	<ul style="list-style-type: none"> Finalization of Project Plan Deployment of all key (core & non-core) resources Deployment of Project Management tool 	2.00%	1	2.00%	T+45 days
2	1	Implementation Planning, Design and Set Up	<ul style="list-style-type: none"> Finalization of Project Design Documents Document Management System Sanity Testing Report Submission of final user stories for all modules 	3.00%	1	3.00%	T+6 months
3	1	Budget Management	Acceptance of Budget Management	2.50%	1	2.50%	Upon acceptance
4	1	Modified HRMS	Acceptance of Modified HRMS	2.00%	1	2.00%	Upon acceptance
5	1	Expenditure Management	Acceptance of Bill Management System	4.00%	1	4.00%	Upon acceptance
6	1	Expenditure Management	Acceptance of Deposits	1.50%	1	1.50%	Upon acceptance

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#	Track	Stage	Pre-Requisites for Payment	Unit Cost	Number of units	Value as % of TCV	Timelines
7	1	Pension Management	Acceptance of Pension, Provident Fund & Group Insurance Management	2.00%	1	2.00%	Upon acceptance
8	1	Expenditure Management	Acceptance of Strong Room	0.50%	1	0.50%	Upon acceptance
9	1	Receipt Management	Acceptance of Receipt Management	2.00%	1	2.00%	Upon acceptance
10	1	Accounts & Audit	Acceptance of E-reconciliation & E-Accounts	2.00%	1	2.00%	Upon acceptance
11	1	Grievance Redressal	Operationalization of Grievance Redressal/ BSG	0.50%	1	0.50%	Upon acceptance
12	1	Vendor Management	Acceptance of Vendor Portal	1.50%	1	1.50%	Upon acceptance
13	1	Expenditure Management	Acceptance of E-Sanctions & Online UC	1.50%	1	1.50%	Upon acceptance
14	1	Payment after go-live of IFMIS Next Gen (G')	Payment after go-live of IFMIS Next Gen (Wave I)	5.50%	1	5.50%	T+16 months
15	2	IFMIS Next Gen O&M for Wave I	O&M of IFMIS Next Gen (T+16 to T+24 months)	1.315%	2.66	3.50%	Quarterly

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#	Track	Stage	Pre-Requisites for Payment	Unit Cost	Number of units	Value as % of TCV	Timelines
16	1	Debt, Loans, Investment, Guarantee Management	Acceptance of Debt, Loans, Investment, Guarantee Management	1.50%	1	1.50%	Upon acceptance
17	1	LMS & ATS Operations	Acceptance of LMS & ATS Operations	0.50%	1	0.50%	Upon acceptance
19	1	Accounts & Audit	Acceptance of Internal Audit, Inspection & AG Audit	1.50%	1	1.50%	Upon acceptance
20	1	Expenditure Management	Acceptance of Purchase & Inventory	1.50%	1	1.50%	Upon acceptance
21	1	Accounts & Audit	Acceptance of Book-Keeping & Asset Accounting	0.50%	1	0.50%	Upon acceptance
22	1	Accounts & Audit	Acceptance of Local Fund Audit Management	1.50%	1	1.50%	Upon acceptance
23	1	Cash Management	Acceptance of Cash Management	1.50%	1	1.50%	Upon acceptance
24	1	Payment after integrated go-live of IFMIS Next Gen (G)	Payment after integrated go-live of IFMIS Next Gen (Wave II)	4.00%	1	4.00%	T+24 months
25	1	Successful ISO 27001 certification of IFMIS Next Gen	Successful ISO 27001 certification of IFMIS Next Gen	1.00%	1	1.00%	T+30 months

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#	Track	Stage	Pre-Requisites for Payment	Unit Cost	Number of units	Value as % of TCV	Timelines
26	2	IFMIS Next Gen O&M for all the 18 modules	O&M of IFMIS Next Gen (20 Quarters/ 5 years)	2.475%	20	49.50%	Quarterly
27	2	IFMIS Next Gen O&M	Completion of exit management at T+84 (Handover and Knowledge Transfer) including shadow & secondary support of 6 months	3.00%	1	3.00%	T+84 months
						100%	

Table 15: Payment Terms

Note: In case of sub-contracting / consortium / joint venture, the lead bidder, sub-contractor, consortium partners, JV partners can mutually decide upon the account in which the payment is to be made. The department has not envisioned an escrow account and will not interfere in the contract between the bidder, sub-contractor, consortium partners, JV partners.

7.2 Penalties

The penalties to be levied for liquidated damages shall be capped at a maximum of 10% of the total contract value. Here week constitutes business days as defined in clause 1.2 of Volume III of the RFP.

1. Service Level metrics for implementation of IFMIS Next Gen

a. For Wave I

- i. Penalty on Delay of Individual Module – Failure in timely delivery of module(s) as per the acceptance criteria would entail a penalty of 0.5% per week of delay of the payment due as per payment milestone.
- ii. SI to note that no penalties will be imposed for delay in the delivery of any module within Wave I development period i.e., within T+7 to T+13 months.
- iii. Penalty on Delay of Go-Live of IFMIS Next Gen Wave I – Failure to complete rollout (go-live) of all Wave I modules by T+16 months will attract a penalty of 0.5% per week of the payment due as per payment milestone.

Note: In case of delay beyond T+16 months, all the above penalties shall be imposed.

b. For Wave II

- i. Penalty on Delay of Individual Module – Failure in timely delivery of module(s) as per the acceptance criteria would entail a penalty of 0.5% per week of delay of the payment due as per payment milestone.
- ii. SI to note that no penalties will be imposed for delay in delivery of any module within Wave II development period i.e., within T+17 to T+21 months.
- iii. Penalty on Delay of Integrated Go-Live of IFMIS Next Gen Wave II – Failure in timely final go-live of the complete system at T+24 months as per the envisaged timelines given in section 2.1, would entail a penalty of 1% of the payment due for this milestone per week of delay in final go-live of the system.

Note: In case of delay beyond T+24 months, all the above penalties shall be imposed.

c. For all other milestones under Track 1, delay penalty of 0.5% per week of payment milestone value, shall be imposed on delay of the deliverables under the milestone.

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d. In case of early completion of any module against the agreed timelines, the SI will be credited with an early completion balance equivalent to the number of days before the specified timeline for module completion. In case of delay in completion of any module, the penalty will be calculated based on the net of the number of days of delay and the early completion balance. For. e.g. - If the SI completed module 'A' 10 days before the agreed completion date, then early completion balance will be 10 days. However, if the completion of module 'B' was delayed by 15 days, the penalty will be calculated on 15 days - 10 days = 5 days. Unused early completion balance will result in incentive to the SI to the tune of 1% of the payment due for the module per week or part thereof. The total pay-out for incentives will not exceed 10% of the value of the module as per section 7.1. The incentive pay-out shall be based on the completeness, performance, quality of the work products as evaluated by CTA. Here, 'early completion' refers to the acceptance of the module. The individual module to be completed and accepted in 3 months' time. Early completion balance will only be calculated if the individual module is completed in less than 3 months' time.

2. O&M of IFMIS Next Gen

- a. For delay of every two (2) working days in submitting Root Cause Analysis (RCA) report for critical incidents in agreed timelines, 0.05% of quarterly payment will be levied as penalties
- b. It shall be ensured that all the components in the IFMIS Next-Gen System are within supported versions. Upgrades need to be executed for all components on a regular basis. All components of IFMIS Next Gen System run on supported versions. Every patch released, to be installed on all applicable components in three (3) calendar days. Failure in timely upgrades and updates, a penalty of Rupees Ten Thousand (₹ 10,000) per day of delay will be levied
- c. Any recommendation made by any form of audit conducted on the IFMIS Next-Gen System. 100% of all recommendations agreed upon with CTA, to be implemented by SI within five (5) days of notice from CTA. Any delay in implementation will attract a penalty of Rupees Ten Thousand (₹ 10,000) per day of delay
- d. SI has to perform DR drill every quarter and coordinate with SDC for the same. The system should demonstrate desired RTO and RPO for IFMIS Next Gen. If the DR drill is not successful (the desired RTO/RPO during DR drills is not achieved and the application is also not getting operationalized from DR Site), then a penalty of Rupees Ten Thousand (₹ 10,000) per day of delay, for achieving the same shall be levied. Not conducting DR drill in time shall be considered as not meeting the desired RPO / RTO and same penalty shall be levied.

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- e. In case of delay in switch over to DR site as notified by CTA, a penalty of Rupees Ten Thousand (₹ 10,000) per day of delay in switch over to DR will be levied on the SI.
 - f. Vulnerability Assessment and Penetration testing shall be conducted once every 6 months and after every change in hardware/software or application by the SI. All detected vulnerabilities to be closed and to be reported within the timeframe specified by CTA. In case of any default or violation or delay, following penalties will be levied –
 - i. Penalty up to Rupees Twenty Five thousand (₹ 25,000) per week of delay in conducting the VAPT
 - ii. Penalty up to Rupees Ten Thousand (₹ 10,000) per day of delay in resolving or rectifying or implementing fixes corresponding to the VAPT observations
 - g. Failure in successful implementation and roll out of Change Requests as per the approved timelines by CTA, shall lead to a penalty of 0.1% of the value of change request, per week of delay beyond the approved timelines by CTA.
 - h. If the Purchaser issues a notice to the SI regarding any scope of work, the SI is expected to acknowledge the same within three (3) working days from the issuance of the notice. If no response is received from the SI within three (3) working days, Purchaser will impart a penalty of Rupees Ten Thousand (₹ 10,000) per day of delay.
3. In the event of delay or any gross negligence in implementation of the project before Go-Live, for causes solely attributable to the SI, in meeting the deliverables, the CTA shall be entitled at its option to recover from the SI as agreed, liquidated damages, as defined in Volume I of the RFP subject to a limit of 10% of the total contract value.
 4. Notwithstanding any other clause, sum of all penalties during the O&M period levied in a quarter should not exceed 10% of the payment for that quarter. Purchaser may recover such amount of penalty from the associated payments of the same project being released to the SI.

8 Service Level Metrics (SLMs)

8.1 General Instructions

The purpose of the SLMs is to define the levels of service to be provided by SI to CTA for IFMIS Next Gen, for the duration of the project or until this SLA has been amended.

The objectives of the SLMs is to –

- Set out the service level goals that IFMIS Next Gen aims to achieve and maintain,
- Make explicit the expectations that CTA has from the SI and define the service level goals that the SI would be required to adhere to over the duration of the Agreement.

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- Help CTA control the levels and performance of SI's services in this engagement. The SI will be required to bring to CTA's notice any issues that have the potential to impact SLAs so that the requisite action can be taken to address the same.

Following points to be noted by the SI with respect to the SLAs –

1. SI shall deploy automated tools for measurement and reporting of SLAs. SI's role shall be limited to development, deployment and maintenance of the SLA reporting tool. Control of the tool shall be with CTA or its appointed agency. All aspects of the reporting tool including code and implementation shall be subject to review/audit by CTA or its appointed agency. SI is required to provide periodic SLA reports through the tool which may be audited by CTA or its nominated agency from time to time.
2. All O&M related SLA parameters shall be monitored on a monthly basis as per the individual SLA parameter requirements. In case the service levels cannot be achieved at service levels defined in the tables below, it shall result in a breach of contract and shall invoke penalties. However, penalties would be levied every quarter.
3. The percentage penalty would be calculated on the bill raised by the SI for the concerned quarter. For metrics measured monthly, at the end of a quarter the lowest score of monthly SLM reports shall be used for calculation of penalties.
4. While the SLAs are imposed on the SI and the SI is expected to adhere to the same, there will be instances that a breach in the SLA takes place because of no fault of the SI. CTA may, in its sole discretion, in writing, relax any penalties imposed on the SI, given the SI submits a comprehensive RCA clearly identifying the root cause while also establishing that it is not in fault.
5. The RCA report should be shared with MP SDC. In case the SLA breach is due to MP-SDC, the RCA report is to be shared with MP SDC and to be accepted by MP SDC.
6. Root cause analysis (RCA) to be prepared by the SI for all cases of breach in SLAs and shared with CTA. For certain incidents, RCA may be carried out by CTA (or CTA appointed agency).
7. If the penalty cap is breached, CTA will have the right to terminate the contract.
8. In the event of failure of maintaining performance metrics specified in the SLA, penalties as defined in the SLA would be levied per payment milestone period subject to a maximum of 10% of the payment for that period. Purchaser may recover such amount of penalty from the associated payments of the same project being released to the SI.
9. SLA penalties will be applied to the SI in case of breaches attributable to the SI.

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8.2 SLMs for IFMIS Next Gen

Performance penalties shall be levied as per the process outlined below.

Score Range of Service Levels	Penalties
<55 & >=45	0.25 % penalty (of the payment due for that quarter) for every point < 55
<45	0.5 % penalty (of the payment due for that quarter) for every point < 45

This section lists down the SLA for IFMIS Next-Gen. For purpose of this section, criticality of services are defined as below –

Criticality	Modules
High criticality	<ul style="list-style-type: none"> • Cash Management • Receipts Management • Modified HRMS • Vendor Portal • Bill Management System, • Debt, Loans, Investment, Guarantee Management • E-Sanctions & Online UC • Deposits • Budget Management • Pension, Provident Fund & Group Insurance Management
Low criticality	<ul style="list-style-type: none"> • Purchase & Inventory • Strong Room • Internal Audit, Inspection & AG Audit • Local Fund Audit Management • ATS Operations • E-Reconciliation & E-Accounts • General Ledger & Asset Accounting • Grievance Redressal

Table 16: Module Criticalities

The definition of severity of incidents is provided below –

Severity	Definition
P1: Severity Level 1 - Emergency / Urgent Critical Impact	<p>Incident has caused a complete and immediate work stoppage including any transactional processes affecting primary business processes, broad group of users on IFMIS Next Gen. The failure creates serious business and financial exposure, including but not limited to the following conditions:</p> <p>E.g. (any one or more):</p> <ul style="list-style-type: none"> • Budget module not working during the budget estimation exercise • Many or major files lost, large data corruption

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Severity	Definition
	<ul style="list-style-type: none"> • > 80% of departments, offices, sites or user-base affected • Critical business cycles (e.g., month/quarterly/year-end financial activity). • Critical business processes (e.g., payment runs, batch jobs) • The failure causes a system to be inoperable to all users, total loss of functionality. • Security threat, i.e., virus or worm spread through the enterprise.
P2: Severity Level 2 – High/ Major Business Impact	<p>Incident has affected a business process in such a way that business functions are severely degraded, or multiple users are affected, or affecting system operation, maintenance and administration, etc. The urgency is less than in critical situations because of a less immediate or impending effect on system performance</p> <p>E.g.:</p> <ul style="list-style-type: none"> • Medium visibility and moderate impact on financials. • Functionality usage is limited. • Few files were lost or corrupted. • > 50% of departments, offices, sites or user-base affected
P3: Severity Level 3 – Medium/ Moderate Business Impact	<p>Incident has affected a business process in such a way that certain functions are unavailable to end users or a system or service is degraded. Minor problems that do not significantly impair the functions of the system and do not seriously affect services.</p> <p>E.g.:</p> <ul style="list-style-type: none"> • Minimal immediate business or financial exposure. • Functionality is degraded but can be circumvented. • No business or financial impact. • < 10% of departments, offices, sites or user-base affected

Table 17: Definition of Priorities of Tickets

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S. No.	SLA Criteria	Measurement	Baseline		Low Performance		High Performance		Breach	
			Value	Score	Value	Score	Value	Score	Value	Score
1	For High Criticality Services as defined in Table 16, availability of the IFMIS Next Gen measured in terms of uptime (shall include all its sub-components)	<ul style="list-style-type: none"> Availability = 1- [(Application Downtime)/(Total Time-Scheduled Maintenance Time)] Downtime shall be measured from the time the application becomes unavailable to the end user to the time it becomes fully available. Calculation shall be done on a monthly basis Planned downtime shall be excluded from the above calculation. Availability shall apply individually to all the underlying services and functionalities. This SLM will apply for non-availability of one or more modules e.g. if two functionalities/ modules are not available at the same time, they would be considered as one for the availability SLA calculation. Measured 24x7 For each additional drop of 1% in performance below 99%, additional 0.5% of the Quarterly Payment amount shall be levied as additional Liquidated Damages with a maximum cap of 5% 	>99% & <99.99%	4	< 99%	3	>=99.99%	5	-	-
2	For Low Criticality Services as defined in Table 16, availability of the IFMIS Next Gen measured in terms of uptime (shall include all its	<ul style="list-style-type: none"> Availability = 1- [(Application Downtime)/(Total Time-Scheduled Maintenance Time)] Downtime shall be measured from the time the application becomes unavailable to the end user to the time it becomes fully available. Calculation shall be done on a monthly basis Planned downtime shall be excluded from the above calculation. Availability shall apply individually to all the underlying services and functionalities. This SLM will apply for non-availability of one or more modules e.g. if two functionalities/ modules are not 	>98% & <99.90%	2	<98%	1	>=99.90%	3	-	-

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S. No.	SLA Criteria	Measurement	Baseline		Low Performance		High Performance		Breach	
			Value	Score	Value	Score	Value	Score	Value	Score
	sub-components)	<p>available at the same time, they would be considered as one for the availability SLA calculation.</p> <ul style="list-style-type: none"> Measured 24x7 For each additional drop of 1% in performance below 98%, additional 0.5% of the Quarterly Payment amount shall be levied as additional Liquidated Damages with a maximum cap of 5% 								
3	Average transaction response time for High Criticality Services as defined in Table 16	<ul style="list-style-type: none"> Average of (Time of receipt of response in entirety-Time of submission of request) measured monthly The list of services under this section may include any other service as decided by CTA This will be measured at the application level for all transactions through the APM tool. This will also include API response time and messaging service response time. This will not include reports/ dashboards for which separate SLAs have been provided. 	<=3 seconds	4	>3 and <=5 sec	3	< 2 seconds	5	> 5 seconds	-2
4	Average transaction response time for Low Criticality Services as defined in Table 16	<ul style="list-style-type: none"> Average of (Time of receipt of response in entirety-Time of submission of request) measured monthly The list of services under this section may include any other service as decided by CTA This will be measured at the application level for all transactions through the APM tool. This will also include API response time and messaging service response time. This will not include reports/ dashboards for which separate SLAs have been provided. 	<= 4 seconds	4	> 4 seconds & <= 6 seconds	3	-	-	> 6 seconds	-1
5	Average page loading time for all User Interfaces. The	<ul style="list-style-type: none"> Average time to load a page in entirety. This will exclude reports and dashboards. Monthly total time measured shall be on a 24 x 7 basis. 	<= 2 seconds	5	> 2 seconds & <= 4 seconds	3	-	-	> 4 seconds	-2

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S. No.	SLA Criteria	Measurement	Baseline		Low Performance		High Performance		Breach	
			Value	Score	Value	Score	Value	Score	Value	Score
	response will be measured from 5 desktops from CTA office.	<ul style="list-style-type: none"> Monthly measurement through the SLA tool 								
6	Response time for generation of BI/MIS reports (Simple Reports)	<ul style="list-style-type: none"> Average response time for generation of BI/MIS reports including web and mobile application. Measured monthly Simple reports include reports involving <=1 million rows and <=5 joins 	<=15 seconds	4	> 15 seconds & <=20 seconds	3	< =5 seconds	5	> 20 seconds	-1
7	Response time for generation of BI/MIS reports (Complex Reports)	<ul style="list-style-type: none"> Average response time for generation of BI/MIS reports including web and mobile application Measured monthly Complex reports include reports involving > 1 million rows or > 5 joins 	<=30 seconds	4	> 20 seconds & <=35 seconds	3	< =10 seconds	5	> 35 seconds	-2
8	For High Criticality Services as defined in Table 16, availability of IFMIS Next Gen Mobile Application measured in terms of uptime (shall include all its sub-components)	<ul style="list-style-type: none"> Availability = 1- [(Application Downtime)/(Total Time-Scheduled Maintenance Time)] Downtime shall be measured from the time the application becomes unavailable to the end user to the time it becomes fully available. Calculation shall be done on a monthly basis Planned downtime shall be excluded from the above calculation. Availability shall apply individually to all the underlying services and functionalities. This SLM will apply for non-availability of one or more modules e.g. if two functionalities/ modules are not available at the same time, they would be considered as one for the availability SLA calculation. Measured 24x7 	>99% & <99.99%	3	< 99%	2	>=99.99%	5	-	-

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S. No.	SLA Criteria	Measurement	Baseline		Low Performance		High Performance		Breach	
			Value	Score	Value	Score	Value	Score	Value	Score
9	For Low Criticality Services as defined in Table 16, availability of the IFMIS Next Gen Mobile Application measured in terms of uptime (shall include all its sub-components)	<ul style="list-style-type: none"> Availability = 1- [(Application Downtime)/(Total Time-Scheduled Maintenance Time)] Downtime shall be measured from the time the application becomes unavailable to the end user to the time it becomes fully available. Calculation shall be done on a monthly basis Planned downtime shall be excluded from the above calculation. Availability shall apply individually to all the underlying services and functionalities. This SLM will apply for non-availability of one or more modules e.g. if two functionalities/ modules are not available at the same time, they would be considered as one for the availability SLA calculation. Measured 24x7 	>98% & <99.90%	2	<98.00%	1	>=99.90%	3	-	-
10	Helpdesk ticket / Incident response time	<ul style="list-style-type: none"> Average Time taken to perform both of: <ul style="list-style-type: none"> (a) Acknowledge and register the ticket / incident in the Incident Management System with requisite priority, once the ticket / incident is logged through any one of the channels and (b) Assign the ticket/ incident to the concerned team Measured as average of all incidents responded to within target timelines. Cyber threat incidents will be measured through this SLA Any ticket not attributable to the SI will have to be measured separately. Ad hoc reporting and data requests not to be considered for this. This SLA will exclude any resolution delay which is not attributable to SI, provided SI is able to prove the same to CTA's satisfaction with RCAs 	P1 <=15 minutes P2 <= 1 hour P3 <= 2 hours	4	-	-	P1 <=5 minutes P2 <= 15 minutes P3 <= 30 minutes	5	P1 > 15 minutes P2 > 1 hour P3 > 2 hours	-2

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S. No.	SLA Criteria	Measurement	Baseline		Low Performance		High Performance		Breach	
			Value	Score	Value	Score	Value	Score	Value	Score
		<ul style="list-style-type: none"> Ticket priorities defined in Table 17. 								
11	Helpdesk ticket / Incident resolution time	<ul style="list-style-type: none"> Average Time taken to successfully resolve the ticket from the time it was successfully recorded and assigned in the ticketing tool. Cyber threat incidents will also be measured through this SLA Any ticket not attributable to the SI will have to be measured separately. Ad hoc reporting and data requests not to be considered for this. This SLA will exclude any resolution delay which is not attributable to SI, provided SI is able to prove the same to CTA's satisfaction with RCAs Ticket priorities defined in Table 17. 	P1 <=1 hour P2 <= 4 hours P3 <= 16 hours	4	-	-	P1 <=30 minutes P2 <= 2 hours P3 <= 8 hours	5	P1 > 1 hour P2 > 4 hours P3 > 16 hours	-2
12	Time taken to provide ad-hoc data/ reports from IFMIS Next Gen database upon request from CTA.	<ul style="list-style-type: none"> Average of the time taken from receipt of request in its entirety from CTA and submission of data/reports in their entirety to CTA. This SLA will be applicable only during Business hours and working days. 	< 1 working day	2	> 1 working days & <=2 working days	1	<=2 hours	3	> 2 working days	-2
13	Meeting Recovery Time Objective (RTO) / Meeting Recovery Point Objective (RPO)	<ul style="list-style-type: none"> Solution should demonstrate an RPO of 0 and RTO <= 120 minutes 	RPO = 0 & RTO <=120 minutes	3					RPO > 0 & RTO > 120minutes	-3

9 Acceptance Criteria

The primary goal of Acceptance Testing, Audit and Certification is to ensure that the IFMIS Next Gen meets requirements, standards, and specifications as set out in this RFP and as needed to achieve the desired outcomes. The basic approach for this will be ensuring that the following are associated with clear and quantifiable metrics for accountability -

- Project Objectives
- Functional requirements
- Acceptance of the system design
- Infrastructure Compliance Review
- Availability of IFMIS Next Gen Services in the defined locations
- Performance
- Security
- Manageability
- Service Levels Reporting System
- Project Documentation
- Data Quality Review

Important Terms and conditions –

1. A 3rd party agency may be appointed by CTA for acceptance testing, audit and certification and CTA or its nominated unit/team shall review all aspects of project development and implementation covering software, hardware and networking including the processes relating to the design of solution architecture, design of systems and sub-systems, coding, testing, business process description, documentation, version control, change management, security, service oriented architecture, performance in relation to defined requirements, interoperability, scalability, availability and compliance with all the technical and functional requirements of the RFP and the agreement.
2. It is mandatory for SI to get the performance testing done twice each by a CERT-IN certified third-party agency (preferably in June and December every year or as the CTA may direct).
3. The SI shall provide for OEM support and certification for correct configuration and working of the product as per best practices and usage of the product.

CTA will establish appropriate processes for notifying the SI of any deviations from defined requirements at the earliest instance after noticing the same to enable the SI to take corrective action. Such an involvement of the Acceptance Testing and Certification agency, nominated by CTA, will not, however, absolve the SI of the fundamental responsibility of designing, developing, installing, testing and commissioning the various components of the project to deliver the services in perfect conformity with the Service levels.

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The acceptance criteria for IFMIS Next Gen shall be as per the table below –

Requirement	Indicative Criteria
Functional requirements review	<ul style="list-style-type: none"> • Review and verification of the system against the functional requirements signed-off between CTA and SI. • Review and verification of system features against the agreed feature list, user stories etc. • The acceptance testing w.r.t. the functional requirements shall be performed by both independent third party agency (external auditors) as well as the select department users (for User Acceptance Testing) or as identified by CTA.
Review of IT Components and Monitoring systems	<ul style="list-style-type: none"> • Verify the conformity of application software and other components supplied by the SI against the requirements and specifications provided in the RFP and/or as proposed in the proposal submitted by the selected Bidder • Compliance review shall not absolve the vendor from ensuring that proposed IT components meets the SLA requirements. • Verify the accuracy and completeness of the information captured by the service level monitoring solution implemented by the SI and certify the same. • The monitoring solution, based on service levels, shall be configured to calculate the penalties as defined in the SLMs. • Verify access to generate reports from the monitoring solution.
Security review	<ul style="list-style-type: none"> • Audit of Application security mechanism • Assessment of authentication mechanism provided in the application /components/modules • Assessment of data encryption mechanisms implemented in the solution • Assessment of data access privileges, retention periods and archival mechanisms • Review of security policies, protocols etc. • Review of user roles and the access provided • Application Security mechanisms in compliance with the IT Act 2000,2008 Amendment and IT rules 2011, such that it maintains data/information Integrity, Confidentiality, Non-repudiation

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Requirement	Indicative Criteria
	<ul style="list-style-type: none"> Audit of Security mechanisms so that they are in compliance with the latest Guidelines by Controller of Certifying authority (CCA), IT Act, ISO27001.
Performance review	<ul style="list-style-type: none"> Review of the performance of the deployed solution against certain key parameters defined in requirements and the service level metrics described in this RFP and/or agreement between CTA and SI. Such parameters includes request response time, work-flow processing time, concurrent sessions supported by the system, Time for recovery from failure, Disaster Recovery drill etc. Verification of scalability provisioned in the CTA system for catering to the requirements of application volume growth in future.
Availability review	<ul style="list-style-type: none"> IFMIS Next Gen should be designed to remove all single point failures. Appropriate redundancy shall be built into all the components to provide the ability to recover from failures. . The agency shall also verify the availability of IFMIS Next Gen services to all the users in the defined locations.
Manageability review	<ul style="list-style-type: none"> Manageability requirements such as remote monitoring, administration, configuration, fault identification etc. shall have to be tested.
Project documents and deliverables	<ul style="list-style-type: none"> Review the project documents developed by SI including requirements, design, source code, installation, training and administration manuals, version control etc. Any issues/gaps identified by the Agency, in any of the above areas, shall be addressed by the SI to the complete satisfaction of CTA.
Data quality review	<ul style="list-style-type: none"> Review the data migration logs and perform data quality review to check for any gaps. Sample reports will be generated to check for consistency in output. The SI shall ensure that all legacy data sets including the data maintained in CSFMS and IFMIS and all legacy systems are migrated to IFMIS Next Gen.

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The SI shall prepare and agree with CTA on the detailed plan for Go-Live of IFMIS Next Gen and ensure that it is aligned with the implementation schedule as defined in section 1. The plan must include the completion of the testing activities as mentioned in this section. At a minimum, the go-live shall entail the following. These criteria as mutually agreed with CTA shall also be a part of the module wise go-live.

- All data migration as per section 2.2.5.4 is complete
- All modules have been rolled out and the necessary pilots are compete with the comments sufficiently addressed
- All issues raised during UAT are resolved
- Deployment of all required components is complete
- Application software (Web, Mobile & Emerging Technologies related use cases) deployed successfully in the production environment.
- SLA monitoring tool is operational and access provided to CTA
- Source code submitted to CTA
- Submission of project documentation including user manuals, FAQs to CTA
- Conduct of Training Sessions as desired in RFP and at least 1 train the trainer session conducted for all the modules
- VAPT and Performance testing is complete
- Any 3rd party verification, as applicable and defined in section 5.5 is complete

9.1 Acceptance Procedure

a. Acceptance Procedure and Testing Requirements - SI shall create the test strategy document which shall include testing plan & strategy. The document shall include different types of test cases performing various testing phases as mentioned below:

- Unit testing
- System Testing & Integration Testing
- Performance & Load testing
- User Acceptance Testing

b. Unit Testing - The SI will test all individual units/ modules under unit testing during the development. The SI will submit a unit testing report along with test scenario, test cases, tests result etc. at the end of the unit testing exercise.

c. System Testing & Integration Testing - Once development and Unit testing is completed, SI shall conduct system testing and integration testing for each of the released functionalities/modules. SIs team shall conduct this testing under the guidance of the Quality Assurance lead. The testing shall be conducted based on

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system test cases reviewed and approved, in iterative manner till zero defect is achieved.

Integration testing shall be accomplished through the execution of predefined business flows, or scenarios, that emulate how the system behaves on the defined business processes.

The testing shall be done in two phases.

- The first phase (Integration Test) shall concentrate on testing all important business processes inside the system, starting with touch point scenarios, and ending with end-to-end business scenarios. It will be done by SI's team to ensure functionality wise coverage. Access rights and workflow-based approval related testing would also be tested in the Integration Test.

d. System Testing, as a second phase, shall focus on the most important cross-enterprise scenarios with touch points to external components, including testing of conversions, interfaces, reports, and the necessary authorizations. The above testing shall be done in iterative manner to ensure zero defects, before releasing for UAT. The test scenarios, test cases, test results, testing reports etc. shall be submitted as part of UAT pre-requisite to start with the UAT testing. shall be submitted as part of UAT pre-requisite to start with the UAT testing. User Acceptance testing - Module committees / Module SPOCs will be constituted by CTA to perform successful UAT of the developed product. CTA may form different UAT teams for different modules. SI will need to prepare the UAT test cases. SI shall release the identified UAT pre-requisites and facilitate the UAT team to conduct this test. SI will close all observations, bugs etc. identified during the UAT. This process of UAT will continue in an iterative manner till zero defects and UAT go-head provided by UAT team. The SI also needs to ensure that errors/ defects detected in previous round of tests do not get repeated in successive tests. The SI should fix bugs and issues raised during UAT and seek approval on the fixes from the Module SPOCs/Module Committees. Changes in the application as an outcome of UAT shall not be considered as a Change Request. The SI will need to rectify the observations raised. The SI will submit a UAT report along with SIT test cases, test results etc. at the end of the testing exercise and get a sign-off on the UAT report from the Module SPOCs/Module Committees constituted. Security Testing (including Penetration and Vulnerability testing)

The solution should demonstrate compliance with security requirements as mentioned in this RFP including but not limited to security controls in the application, network layer, and security monitoring systems deployed by the SI.

IFMIS Next Gen shall have to pass vulnerability and penetration testing for rollout of each major version. The solution should pass web application security testing for the portal and security configuration review of the baseline infrastructure.

Security and vulnerability testing on the developed IFMIS Next Gen application shall be carried out as per RFP Volume I. The SI shall be responsible to address the identified issues. The agency shall cross verify that identified security issues have been properly addressed and have not resulted in new issues. Security test reports and test cases should be shared with the CTA. During the O&M phase, vulnerability assessment and penetration testing will need to be conducted as per the requirements given in Volume I.

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e. Performance Testing

Once the UAT has been conducted successfully, load, scalability and stress testing would be conducted prior to commissioning & Go-Live. SI should use suitable simulation tools in accordance with the agreed test procedures keeping in view the Year-on-Year growth in transactions. The SI will submit a testing report along with test cases, tests result etc. at the end of the testing exercise.

The SI must ensure deployment of necessary resources and tools during the testing phases. The SI shall perform the testing of the solution based on the approved test plan, document the results and shall fix the bugs found during the testing. It is the responsibility of the SI to ensure that the end product delivered by the SI meets all the requirements specified in the Agreement. The SI shall take remedial action based on outcome of the tests.

- All tools/environment required for testing shall be provided by the SI, as per the RFP provisions.
- Post Go-Live, the production environment should not be used for testing and training purpose. If any production data is used for testing approvals must be taken from CTA, it should be masked and it should be protected.
- The necessary changes to meet the requirements shall be carried out by the SI.

The deliverables for this activity are mentioned below:

- Finalized Test Plan
- Finalized Test Design
- Final Test Case Specification
- Test Data
- Testing Reports
- Necessary modification in software for passing the UAT

A. Acceptance procedures for Written Deliverables (which are all Deliverables other than Operational Deliverables) and Operational Deliverables are as follows –

- a. Written Deliverables: The SI may submit interim drafts of written Deliverables (e.g., designs and documentation during the initial phase of the project) to the Purchaser for review from time to time. The Purchaser agrees to review each interim draft within a reasonable period of time after receiving it from the SI. When the SI delivers a final written Deliverable to the Purchaser, the Purchaser will have the opportunity to review such written Deliverable for an acceptance period of ten (10) working days (the “Acceptance Period”). The Purchaser agrees to notify the SI in writing either stating that the applicable written Deliverable is accepted or rejected in the form delivered by the SI or describing with reasonable particularity any defects/deficiencies that must be corrected prior to acceptance of such written Deliverable. If no response (acceptance/rejection or revision) is received within this time period, the SI may raise the invoice along with deliverable acceptance request. If the Purchaser delivers to the SI a notice of rejection/defects/deficiencies, the SI will correct the described defects/deficiencies as quickly as possible and, in any event, within such reasonable time period specified by the Purchaser in its notice of the

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rejection/deficiencies, the SI will correct the described defects/deficiencies as quickly as possible and, in any event, within such reasonable time period specified by the Purchaser in its notice of the rejection/deficiencies. Upon receipt of a corrected written Deliverable from the SI, the Purchaser will have a period of ten (10) working days to review the corrected written Deliverable. During the development phase, the Purchaser is required to approve the user stories at the earliest but not later than 7 days.

b. Operational Deliverables

- i. To the extent not already specified in the RFP or the agreed Acceptance Test Plan, prior to the date on which the SI is scheduled to deliver each Operational Deliverable to the Purchaser, the SI and the Purchaser will agree upon the testing procedures for the Operational Deliverable, including without limitation detailed test cases and expected results (the "Acceptance Tests"). The Acceptance Tests will be designed to determine whether the Operational Deliverable contains any defects or deficiencies. The Purchaser will have the opportunity during the Acceptance Period to evaluate and test each Operational Deliverable in accordance with the following procedures by executing the Acceptance Tests. The Acceptance Tests may be varied with mutual consent of the Parties if required.
- ii. When the SI has completed an Operational Deliverable, the SI will notify Purchaser of the completion, submit requisite documents for verification of work done. Purchaser will review and provide feedback on the same within ten (10) working days. If no response (acceptance/rejection or revision) is received within this time period, the SI may submit the invoice along with the request to consider deliverable approval.
- iii. The Purchaser shall notify the SI in writing stating that the Operational Deliverable is accepted/rejected in the form delivered by the SI or describing the defects deficiencies as provided in the point below.
- iv. If the Purchaser determines that the Operational Deliverable as delivered by the SI deviates from its approved specifications or otherwise fails to successfully complete applicable Acceptance Tests (or a defect), the Purchaser will inform the SI in writing, describing the defect(s) in sufficient detail to allow the SI to recreate/rectify them. The SI will correct any defects in an Operational Deliverable as quickly as possible after receiving the Purchaser's notice of the defects and, in any event, within ten (10) days after receiving such notice (unless a different period is otherwise specified in the notice of defect sent by the Purchaser) and provide the corrected Operational Deliverable to Purchaser for re- testing within such specified period.
- v. The Purchaser will have a reasonable additional period of time of ten (10) days after receipt of the corrected Operational Deliverable to re-test it so as to confirm its proper functioning. The SI will correct any further defects identified by the Purchaser during the re-test as quickly as possible, but in

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no event, unless otherwise directed by the Purchaser, more than five (5) days after the Purchaser notifies the SI of the further defects.

Note – Both the deliverables must be in compliance to SLAs

- c. For deliverable where no acceptance is required, the SI may raise the invoice after -10 days of submission of the said deliverables
 - d. Correction of Defects Deficiencies in Deliverables:
 - i. Notwithstanding the foregoing provisions, a Deliverable shall be treated as accepted by Purchaser if the Purchaser starts using the Deliverable in a live production environment.
 - ii. If the SI is unable to correct all the defects deficiencies preventing Acceptance of a Deliverable for which SI is responsible after a reasonable number of repeated efforts (but not more than three (3)), the Purchaser may at its election:
 - a. Allow the SI to continue its efforts to make corrections; or
 - b. Accept the Deliverable with its defects deficiencies and deduct such proportionate amounts from the SI's fees as is mutually agreed between the Purchaser and the SI; or
 - c. Terminate this Agreement for cause in accordance with the procedures set forth in clause **Error! Reference source not found.** (except that the Purchaser is under no obligation to provide the SI any further opportunity to cure) and recover its damages subject to the limitations set forth in this Agreement; or
 - d. Invoke the risk purchase clause under this Agreement.
- B. The CTA and its nominated agencies shall be responsible for timely provision of all resources, information, and decision making under its control that are necessary to reach an Agreed and Finalized Project Plan and to initiate implementation of the project.
- C. The CTA and its nominated agencies shall be responsible for timely provision of all resources, access, and information necessary for the Installation and Operational Acceptance of the System (including, but not limited to, any required telecommunications or electric power services), as identified in the Agreed and Finalized Project Plan, except where provision of such items is explicitly identified in the Contract as being the responsibility of the SI.

10 SDC Services

10.1 SDC Services

1. As per state guidelines, the solution shall be hosted on MPSeDC's SDC infrastructure(DC ,NDR& non-prod environment) at Bhopal and DR at NIC Bhubaneshwar all environments to be provided by SDC, MPSeDC). Necessary hardware, operating system and network connectivity will be provided by SDC. The SI shall coordinate with SDC team in ensuring the set-up of necessary infrastructure for IFMIS Next Gen at all the environments .
2. The locations for DC, DR are provided below –
 - DC: State Data Centre, Bhopal
 - DR: National Informatics Centre (NIC), Bhubaneshwar
3. The SI shall communicate the requirements to SDC at least 15 days in advance so that the provisioning of these environments can be done.
4. MPSeDC will provide Infrastructure as a service for setting up Production environment for both DC and DR sites. The SI is expected to share the details of required resources with SDC, at least 15 days prior for provisioning or as per the timelines discussed with CTA and SDC. The SI may take the following hardware specifications provided by SDC in account while calculating the requirements for setting-up the environments for IFMIS Next Gen.
 - MPSeDC is required to provision all other environments(refer Section 4.4.1 Point 7 for a list of environments) required for the solution. The connectivity and setup between the non production environments and SDC (production env.) will be provided by MPSeDC.
 - The cost of components required for setting up non-production environments to be included in the Track 1 – IT Components and Track 2 - AMC ATS sheets and OEM Professional Services in the commercial bid format by the Bidder.
 - Windows DC Edition (2022)
 - RHEL 8 Data Centre edition or higher (unlimited guest)
5. Application-level support (above OS level) shall be provided by the SI.
6. Following SLAs shall be provided by SDC–

S. No.	Parameter	Target (Quarterly Uptime)
1	System Availability for DC Includes – <ol style="list-style-type: none">a. Serverb. Storagec. Backupd. Virtualization layer	>=99.995%

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S. No.	Parameter	Target (Quarterly Uptime)
	e. Others (including the OS and database, backup on time, backup reports, integration of database with the backup, backup retrieval)	
2	<p>Network and Security Availability for DC</p> <p>Includes –</p> <ul style="list-style-type: none"> a. Internal Network Connectivity within DC b. LAN availability c. Intranet Bandwidth Availability within LAN (SDC premises) d. Network Equipment <ul style="list-style-type: none"> a. Core Switch b. Access Switch c. Firewalls d. IPS e. BMS f. EMS etc. 	>=99.995%
4	Helpdesk services	<p>Critical: <=30 Minutes</p> <p>Medium: <=1 day</p> <p>Low: <=2 days</p>
7	<p>System Availability of IT infrastructure for DR</p> <p>Includes –</p> <ul style="list-style-type: none"> a. Server Storage b. Backup c. Virtualization Layer etc. <p>(including the OS and database, backup on time, backup reports, integration of database with the backup, backup retrieval)</p>	>=99.5%
8	<p>Network equipment Availability of IT infrastructure for DR</p> <p>Includes –</p> <ul style="list-style-type: none"> a. Connectivity with MP SWAN & NKN. b. LAN availability c. Internet Bandwidth Availability d. Network equipment e. Core Switch f. Access Switch g. Firewalls h. IPS i. BMS 	>=99.5%

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S. No.	Parameter	Target (Quarterly Uptime)
	j. EMS k. Others Note: (Active and passive Component, with regards to Expanded SDC equipment only)	

SDC Responsibilities

1. Infrastructure level support will be provided by SDC (including OSI Level 1 to 3 support). This will include support for hardware and network monitoring.

Responsibilities of SI	Responsibilities of SDC
<ul style="list-style-type: none"> • Application • Presentation • Session • Transport 	<ul style="list-style-type: none"> • Network • Data Link • Physical

2. SDC shall provide the following reports to CTA on a monthly basis.
 - SLA reports
 - Monitoring report such as server utilization, storage utilization, etc.
 - Root Cause Analysis (RCA) reports for SLA breaches and other incidents
3. SDC to provide login for the Enterprise Monitoring System (EMS) tool or equivalent monitoring tool to CTA for viewing reports and dashboards related to IFMIS Next Gen infrastructure.
4. SDC will provide requisite access to SDC premises to the SI for set up and operations of IFMIS Next Gen.
5. All storage related requirement needs to be fulfilled by SDC, i.e. configuration/reconfiguration, Patching, and management of storage solutions.
6. SDC to provide helpdesk support.
7. SDC is required to provide the sizing requirements in such a way that the solution is able to meet Zero RPO and 120 mins RTO.
8. Data backup/replication and restoration shall be provision by MPSeDC.

11 Appendices

11.1 Appendix I: Key Volumetrics

11.1.1 Number of Employees onboarded on IFMIS (as of 09 April 2025)

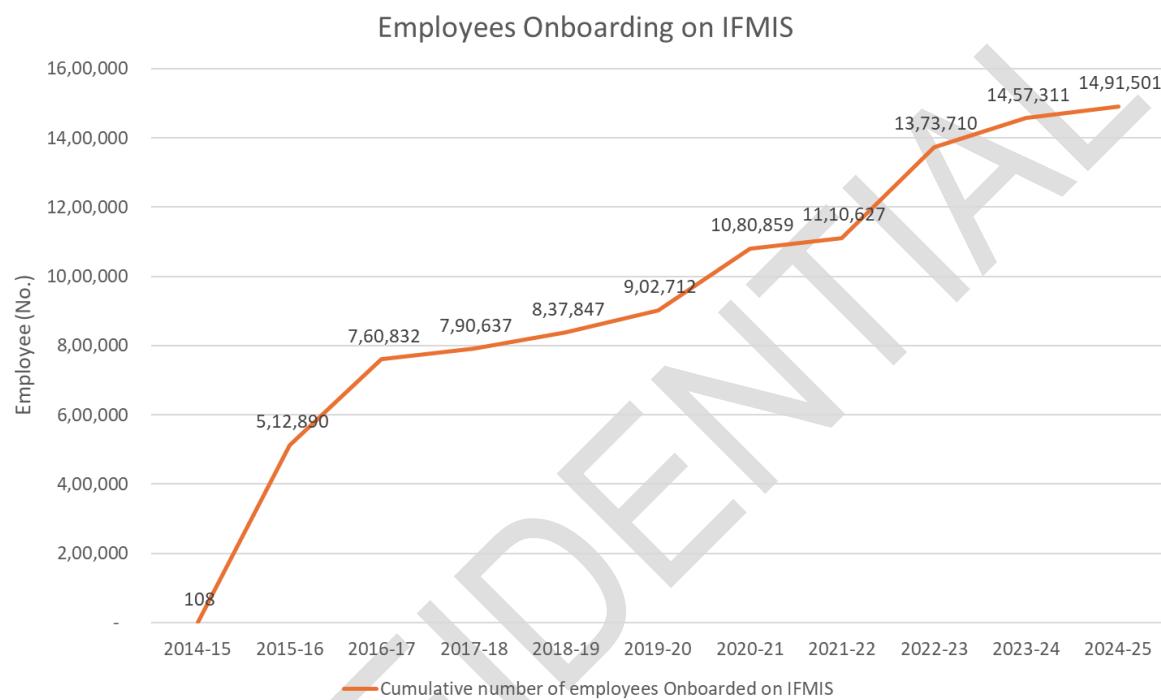


Table 18: Number of Employees onboarded on IFMIS

11.1.2 Summary of Usage Statistics

User Group	Number of Users
Treasury Users	1,818
Number of Treasuries	55
Number of JD offices	7
Number of Accounts Trainings Schools	7
DDOs	5,932
Employees	14,91,501
Pensioners	3,87,398
Budget Controlling Officers	115
Vendors	3.57 Cr.
Additional Department Users	~ 400

Table 19: Other Users

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Key Transaction	Year 2023-24		Year 2024-25	
	Numbers	Amount (INR in Cr.)	Numbers	Amount (INR in Cr.)
Bills	25,72,683	2,87,493	27,94,541	3,34,519
Challans	1,59,64,099	1,11,771	1,79,41,805	1,31,586
Pay Fixation	67,304		1,73,754	
PPOs	27,573		33,173	

Table 20: Transaction Data (as of 9 April 2025)

Other data points provided below –

- Bulk DBT/Vendor payments: 1.25 Crores (Dependent on the number of schemes undertaken by various Departments)
- Implementing Agencies in PFMS – 1,12,605 (Dependent on the project sanctions)
- Total Sanctioned posts: (Dependent on request of departments and new schemes)
 - Regular Emp: 11,15,538
 - Non Regular: 85,795
 - Honorarium emp: 2,90,168
 - Total : 14,91,501

11.1.3 Challans

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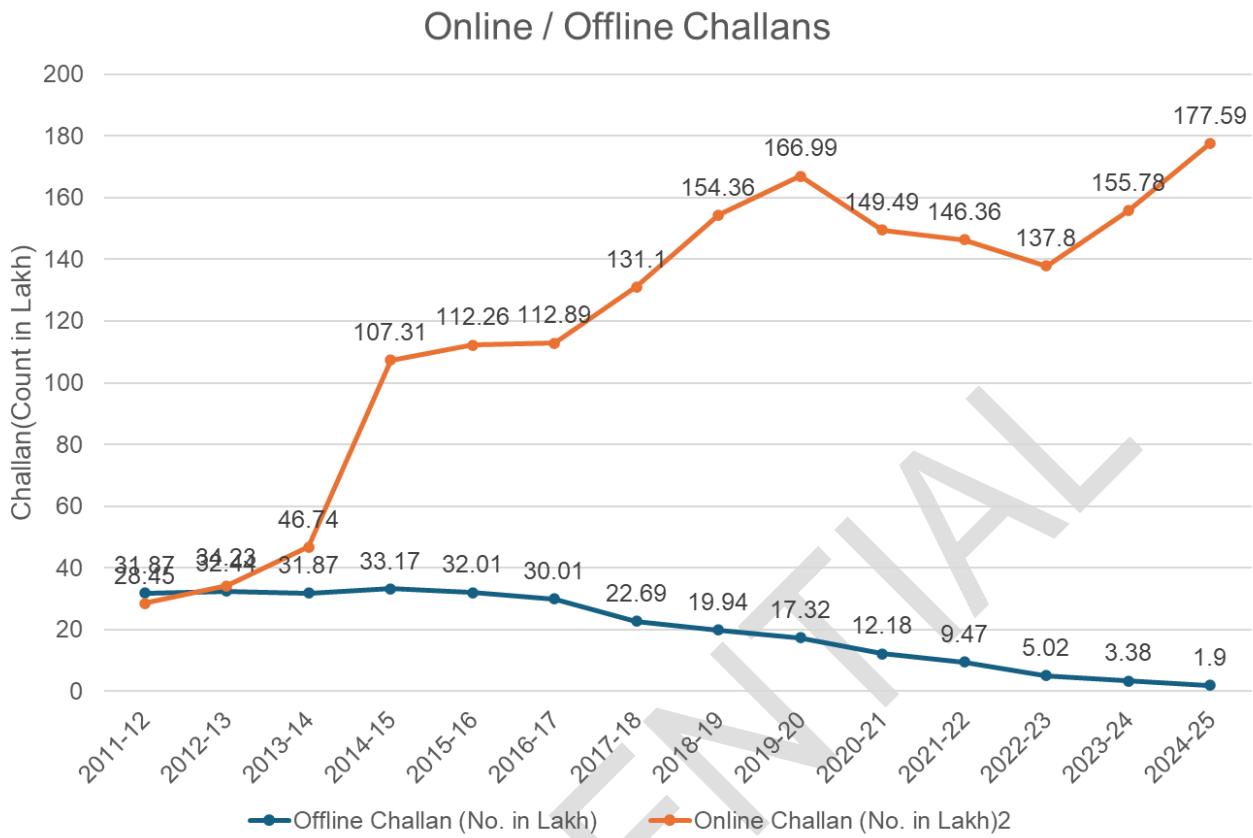
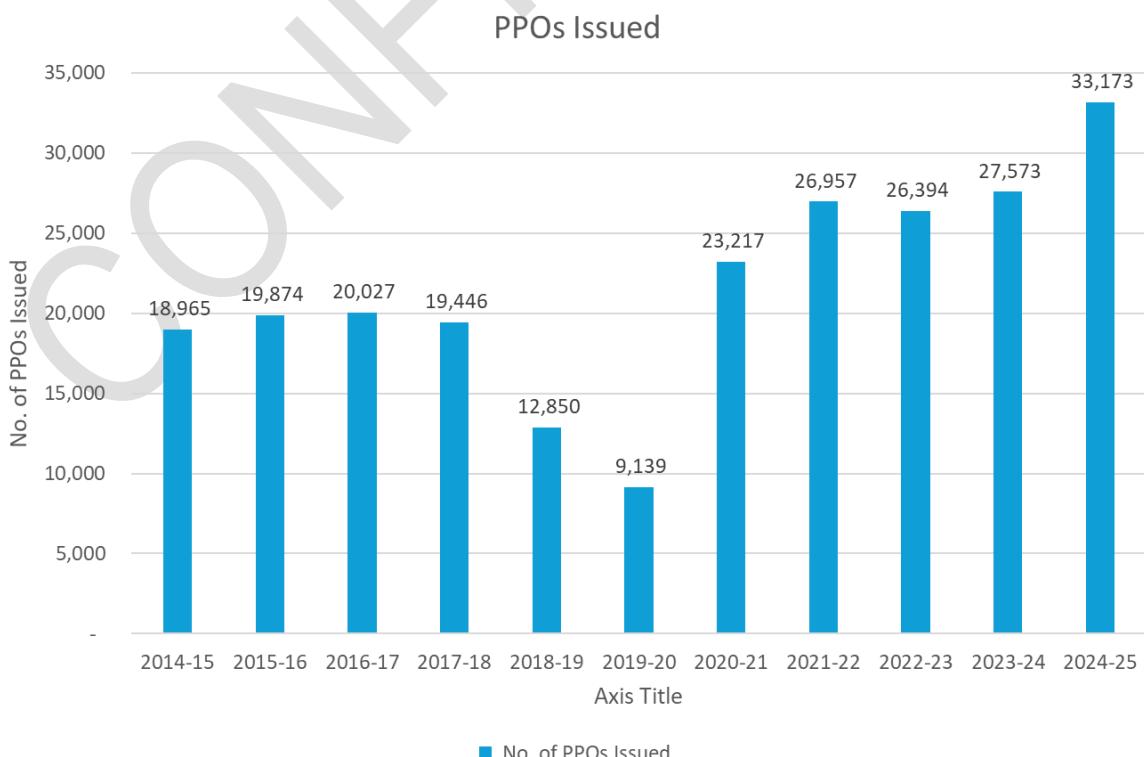


Figure 35: Number of Challans (as of 9 April 2025)

11.1.4 Number of PPOs issued



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Figure 36: Number of PPOs issued (as of 9 April 2025)

11.1.5 Database

- DB File System Size: 34 TB
- DB File System Utilization: 26.65 TB
- Database Size of CSFMS - Appr. 1.5 TB
- Database Size of IFMIS – Appr. 12.3TB (9 TB Documents & 3.3 TB Transactional Data)

11.1.6 Logins and Concurrency

Year	Max logins	Max concurrent users	Average concurrent users
2018-19	15755	2090	2041
2019-20	17420	2894	2124
2020-21	18861	3760	3125
2021-22	25786	3926	3320
2022-23	17830	2584	2333
2023-24	12822	1908	1791
2024-25	30492	2011	1597

Table 21: User Concurrency Trend (as of 09 April 2025)

- Treasury, DDOs and BCOs are users that need to access the system routinely for bill processing, and the bidder must assume at least 30% concurrency for these users
- Pensioners need to access the system few times in year to make profile update, submit Jeevan Praman Certificate, check pension status or review grievances and the bidder may assume 2 - 3% concurrency for these users
- Vendors need to access the system to view bill status, submit new bills, update profile, etc. The current vendors include beneficiaries also. In IFMIS Next Gen vendors will mean only firms / companies submitting their bills to DDOs through vendor portal. Currently there are more than 3+ Cr. Vendors. (many of these may be duplicate, SI will be required to uniquely identify the vendors) and the bidder may assume 12,000 – 15,000 vendor logins per day.
- The concurrency estimates provided above are based on past logins, however bidders are required to make their own concurrency estimates across user groups to provide hardware/ software requirements to meet the prescribed performance levels as per SLAs.
- Additionally, HoDs and other competent authority will access the e-sanction module for issuance of sanction orders, etc. the bidder must assume a concurrency of at least 30% for these users.

11.2 Appendix II: IFMIS Next Gen: Indicative Technology Stack

The minimum technology stack for IFMIS Next Gen is given in the table below –

Category	Product
Security	Advanced Persistent Threat Protection solution
Security	Application Data Protection Software
Security	Database Security Solution
Security	Identity and Access Management Solution
Security	Intrusion Detection and Prevention Systems
Security	Secure Web Gateways
Security	Security Information and Event Management
Security	Enterprise Data Loss Prevention
Security	Endpoint Detection and Response Solution
Security	Performance and Security Testing Tool
Security	Web Application Firewall
Data & Analytics	Data Integration Tools / ETL Tools
Data & Analytics	Data Warehousing Solution
Data & Analytics	BI Solution
Data & Analytics	Analytics Tool/ Business Intelligence and Analytics Platforms/ Data Warehouse Platforms
Monitoring	IT Service Management Tools
Monitoring	Database Activity Monitoring
Monitoring	SLA Monitoring & Reporting Tool
Monitoring	Application Performance Monitoring
Application	Content Management System
Application	LMS and e-Learning
Application	RPA Tool
Application	Document Management System
Application	Digital Experience Platform
Application	Application Server Software
Application	Full Life Cycle API Management
Application	Intelligent Business Process Management Suites
Application	Automated Testing Tools
Management	Code Repository
Management	Configuration Management Database (CMDB)
Management	Data Centre Backup and Recovery Software
Management	DevSecOps Tools
Management	IT Project Management
Storage	Storage
Storage	SAN Switches
Networking	Core Switches
Networking	FCIP Routers

Table 22: Technology Stack

11.3 Appendix III: Relevant Acts and Rules of GoMP & GoI

The overall financial management operations are managed using the following rules, code and manuals –

1. Madhya Pradesh Treasury Code (MPTC), 2020, which governs various treasury functions of the Government and the processes for receipts and expenditure. It consists of 2 volumes – 1st volume consists of the text of the code and the 2nd volume consists of various formats and templates.
2. Madhya Pradesh Financial Code, which describes the financial powers of different authorities' sub-ordinate to the State Government and the related procedure. The procedures specified in the MP Financial Code should be followed in securing and spending funds for discharge of their duties.
3. Madhya Pradesh Civil Services, Pension, Leave and TA Rules
4. Pay Fixation Rules, which specifies various aspects of the latest pay commission notified by the Government.
5. Madhya Pradesh Appropriation Act
6. Madhya Pradesh Fundamental Rules,
7. Book of Financial Powers to ascertain the Competent Authorities for various tasks and necessary approvals required
8. Government Accounting Rules
9. Fiscal Responsibility and Budget Management (FRBM) Act and Rules
10. Madhya Pradesh Purchase Rules
11. Madhya Pradesh State Guarantee Rule, 2009
12. Madhya Pradesh Local Fund Audit Act, 1973
13. Madhya Pradesh Contingency Fund Rules
14. New Pension Rules
15. List of Major Minor Head of Accounts for the State updated 20-03-2025
16. Other rules and acts as applicable and specified by CTA officials
17. Acts, rules and Regulations prescribed by the Finance Department and the CAG office
18. All India Service Acts and Rules
19. The Goods and Service Act
20. Income Tax Act
21. Madhya Pradesh GPF and NPS Rules
22. Madhya Pradesh High court Rules and orders.
23. Other rules as specified in MP Business Allocation Rules, Karya Avantan Niyam
24. GIGW guidelines, various guidelines of MeitY, CERT-In with regards to ICT related standards, procedures, security protocols, data protection and privacy, etc.
25. UIDAI guidelines to be followed for the usage, storage and transactions of AADHAAR database